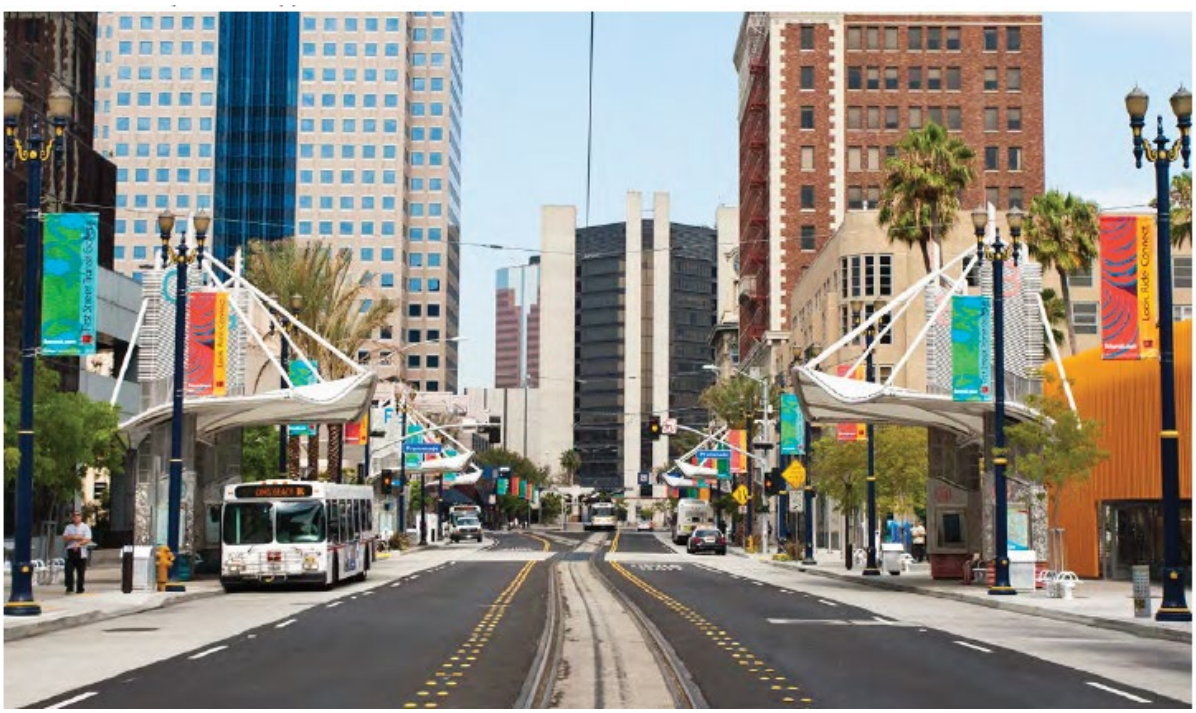
VOLUME II:

APPENDICES TO THE RECIRCULATED DRAFT ENVIRONMENTAL IMPACT REPORT



SCH NO. 2015051054

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS PROJECT

CITY OF LONG BEACH

Submitted to:

City of Long Beach
Development Services/Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

LSA

June 2019

This page intentionally left blank

APPENDIX A:

NOTICE OF PREPARATION, INITIAL STUDY, AND COMMENT LETTERS

This page intentionally left blank

NOTICE OF PREPARATION

This page intentionally left blank

PUBLIC NOTICE/NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT

The City of Long Beach (City) is the Lead Agency responsible for preparing an Environmental Impact Report (EIR) addressing potential environmental impacts associated with a proposed update to its General Plan Land Use Element (LUE) and the adoption of a new General Plan Urban Design Element (UDE) (proposed project). The proposed LUE would replace the current 1989 General Plan LUE. Compared to the existing LUE, the proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach of segregating property within the City through traditional land uses designations and zoning classifications. The updated LUE would establish primary PlaceTypes that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land uses within these areas. Each PlaceType would be defined by unique land use, form, and character-defining goals, policies, and implementation strategies tailored specifically to the particular application of that PlaceType within the City.

In addition to adopting the updated LUE, the City proposes to adopt the UDE, which would be an entirely new element of the City's General Plan. Specifically, the UDE aims to improve the City's PlaceTypes by creating great places, improving the urban fabric, public spaces, and defining edges, thoroughfares, and corridors. By improving the urban fabric, the City would allow for new development that would complement the existing historical development while serving as a unique and distinctive feature of the City.

The EIR will examine potential environmental impacts generated by the proposed project in relation to the following Environmental Analysis categories: Aesthetics, Air Quality, Greenhouse Gas Emissions, Land Use and Planning, Noise, Population and Housing, Public Services and Utilities, and Transportation/Traffic. A more complete description of the project and potential environmental impacts are included in the Initial Study, which is available at the reviewing locations listed below.

Responsible and Trustee Agencies and the Office of Planning and Research: The purpose of this notice is to solicit the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by the City when considering your permit or other approval required for the project. Due to time limits mandated by State law, your response must be sent at the earliest possible date, but not later than **Tuesday, June 16, 2015**. The name of a contact person for your agency will be required.

SCOPING MEETING: The City will conduct a Public Scoping Meeting in order to present the project and the EIR process and to receive public comments.

DATE/TIME: May 27, 2015/6:00 PM

ADDRESS: Long Beach Gas & Oil Department, 2400 East Spring Street, Long Beach, CA 90806

REVIEWING LOCATIONS

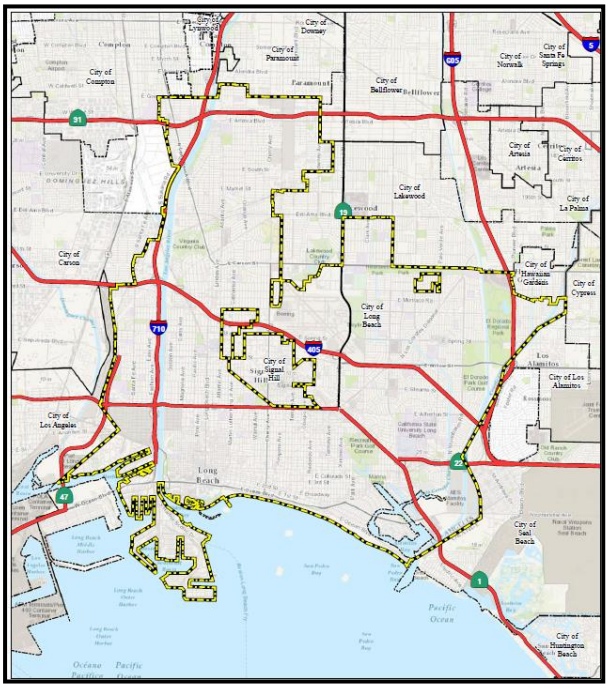
COPIES OF THE INTIAL STUDY ARE AVAILABLE FOR PUBLIC REVIEW FROM MAY 18, 2015, TO JUNE 16, 2015, AT THE FOLLOWING LOCATIONS:

Development Services Department, Planning Bureau
333 West Ocean Boulevard, Fifth Floor
Long Beach, California 90802

Library
City of Long Beach Main Library
101 Pacific Avenue
Long Beach, CA 90802

Online
www.lbds.info/planning/environmental_planning/environmental_reports.asp

Address Comments to:
City of Long Beach
Attention: Craig Chalfant, Planner
333 West Ocean Boulevard, Fifth Floor
Long Beach, California 90802
Phone: (562) 570-6368
E-mail: craig.chalfant@longbeach.gov



INITIAL STUDY

DRAFT

INITIAL STUDY

GENERAL PLAN LAND USE & URBAN DESIGN ELEMENTS PROJECT

CITY OF LONG BEACH, CALIFORNIA

Submitted to:

City of Long Beach
Development Services, Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

LSA

Project No. CLB1505

May 2015

This page intentionally left blank

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 PROPOSED PROJECT 1
1.2 CONTACT PERSON 1
2.0 PROJECT DESCRIPTION 3
2.1 PROJECT LOCATION AND SETTING 3
2.2 PROJECT CHARACTERISTICS 3
2.2.1 Land Use Element 3
2.2.2 Urban Design Element 17
3.0 ENVIRONMENTAL CHECKLIST FORM 21
4.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS 25
4.1 AESTHETICS 25
4.2 AGRICULTURE & FOREST RESOURCES 28
4.3 AIR QUALITY 30
4.4 BIOLOGICAL RESOURCES 34
4.5 CULTURAL RESOURCES 38
4.6 GEOLOGY AND SOILS 40
4.7 GREENHOUSE GAS EMISSIONS 47
4.8 HAZARDS AND HAZARDOUS MATERIALS 48
4.9 HYDROLOGY AND WATER QUALITY 52
4.10 LAND USE/PLANNING 57
4.11 MINERAL RESOURCES 59
4.12 NOISE 61
4.13 POPULATION AND HOUSING 64
4.14 PUBLIC SERVICES 66
4.15 RECREATION 70
4.16 TRANSPORTATION/TRAFFIC 71
4.17 UTILITIES/SERVICE SYSTEMS 75
4.18 MANDATORY FINDINGS OF SIGNIFICANCE 80
5.0 REFERENCES 82

FIGURES AND TABLES

FIGURES

Figure 2.1: Project Location 5
Figure 2.2: Existing Land Uses.....9
Figure 2.3: Proposed PlaceType Map.....11
Figure 4.1: Fault Zones 41

TABLE

Table A: Attainment Status of Criteria Pollutants in the South Coast Air Basin.....32

1.0 INTRODUCTION

1.1 PROPOSED PROJECT

In accordance with the California Environmental Quality Act (CEQA) and its Guidelines, this Initial Study (IS) has been prepared for the proposed General Plan Land Use and Urban Design Elements Project (proposed project) located in the City of Long Beach (City). Consistent with *State CEQA Guidelines* Section 15063, this IS includes a description of the project and an identification of the environmental setting and potential environmental effects.

This IS evaluates the potential environmental impacts that may result the proposed project. The City is the Lead Agency under CEQA. Implementation of this project would include approval of discretionary actions by the City. Therefore, the City Council is responsible for approval of the environmental documentation and for approval of the project.

1.2 CONTACT PERSON

Any questions regarding the preparation of this IS, its assumptions, or conclusions should be referred to:

Craig Chalfant, Planner
City of Long Beach
Long Beach Development Services, Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802
(562) 570-6368
craig.chalfant@longbeach.gov

This page intentionally left blank

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND SETTING

As illustrated by Figure 2.1, Project Location, the project site includes the entire area within the City limits of the City of Long Beach (City) (excluding the City of Signal Hill, which is completely surrounded by the City of Long Beach) in Los Angeles County (County), California. The City is bordered on the west by the Cities of Carson and Los Angeles (including Wilmington and the Port of Los Angeles); on the north by the Cities of Compton, Paramount, and Bellflower; on the east by the Cities of Lakewood, Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach. The City is also bordered by the unincorporated communities of Rancho Dominguez to the north and Rossmoor to the east. The Pacific Ocean borders the southern portion of the City, and as such, portions of the City are located within the California Coastal Zone.

Regional access to the City is provided by Interstate 710 (I-710) (traverses the central portion of the City from north to south), Interstate 405 (I-405) (traverses the northern portion of the City from northwest to southeast), State Route 91 (SR-91) (traverses the northernmost portion of the City from east to west), State Routes 103 and 47 (SR-103 and SR-47, respectively) (traverse the western border of the City from north to south), and State Route 1 (SR-1) (traverses the central portion of the City from east to west).

A variety of transit routes maintained by the Metropolitan Transportation Authority (Metro), Long Beach Transit, and the Orange County Transportation Authority (OCTA) also provide both regional and local access to the City.

In its existing setting, the primary land uses characterizing the City are residential (48 percent), commercial (12.5 percent), office (28.6 percent), streets/right-of-ways (25 percent), industrial (22 percent), and open space and recreational (6 percent) uses.

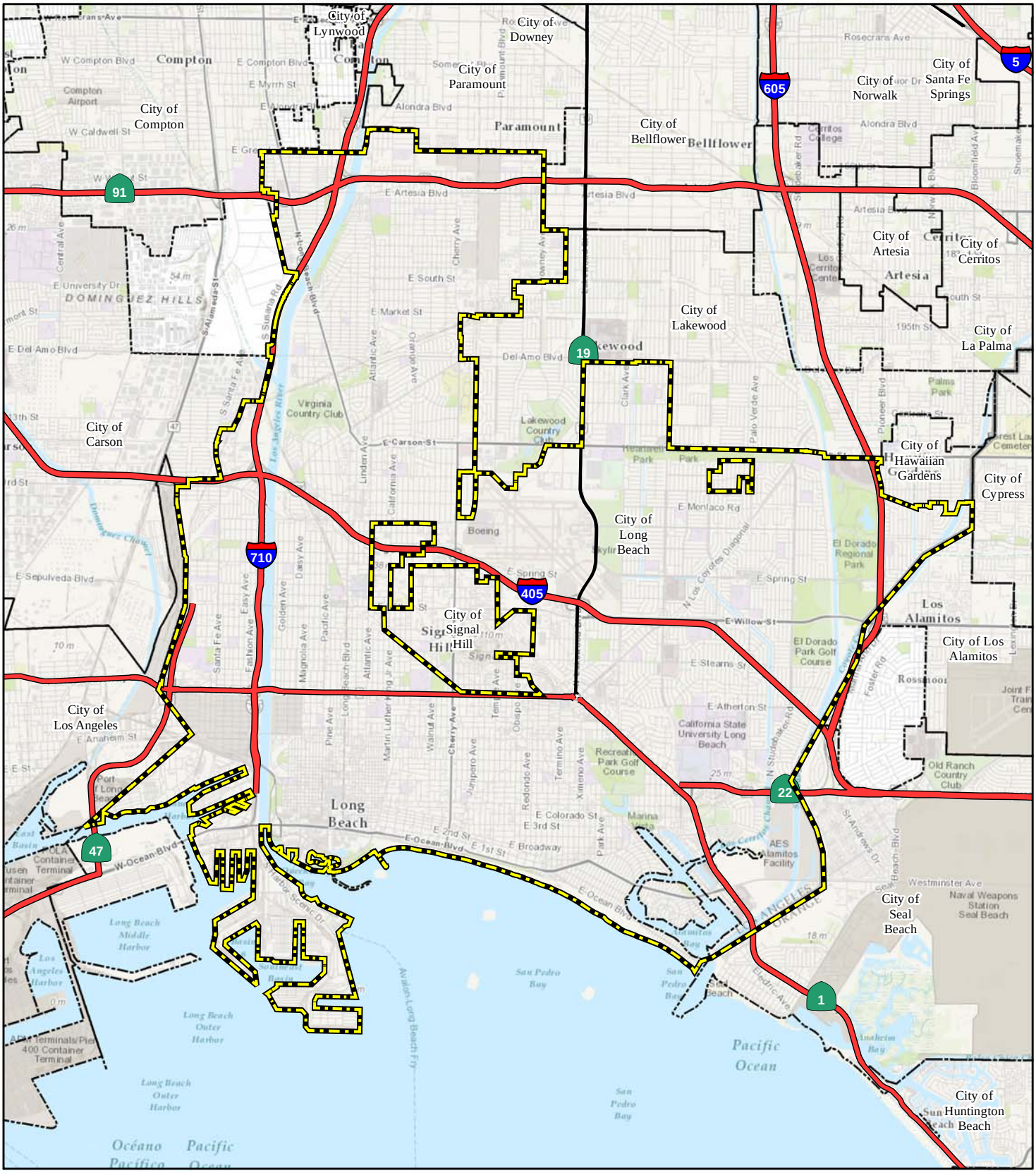
2.2 PROJECT CHARACTERISTICS

The proposed project includes the approval of both the General Plan Land Use and Urban Design Elements. The following discussion summarizes the key components of both proposed General Plan Elements.

2.2.1 Land Use Element

At the heart of the City's General Plan is the Land Use Element (LUE), which serves as a roadmap directing the long-term physical development of the City. As required by Section 65302 of the California Government Code, the LUE is one of the primary required elements of a community's General Plan. The proposed LUE would replace the current 1989 General Plan LUE. In the event that the proposed updated LUE is adopted by the City, the City's existing Local Coastal Program (LCP) would also be updated to allow for the land use changes proposed within those areas located within

This page intentionally left blank



LSA

LEGEND

Project Area (City of Long Beach)

FIGURE 2.1

0 1 2
Miles

SOURCE: Bing Maps (c. 2008); ESRI (2008)

I:\CLB1404\G\Project_Loc.ai (3/9/15)

Long Beach General Plan
Land Use and Urban Design Elements

Project Location

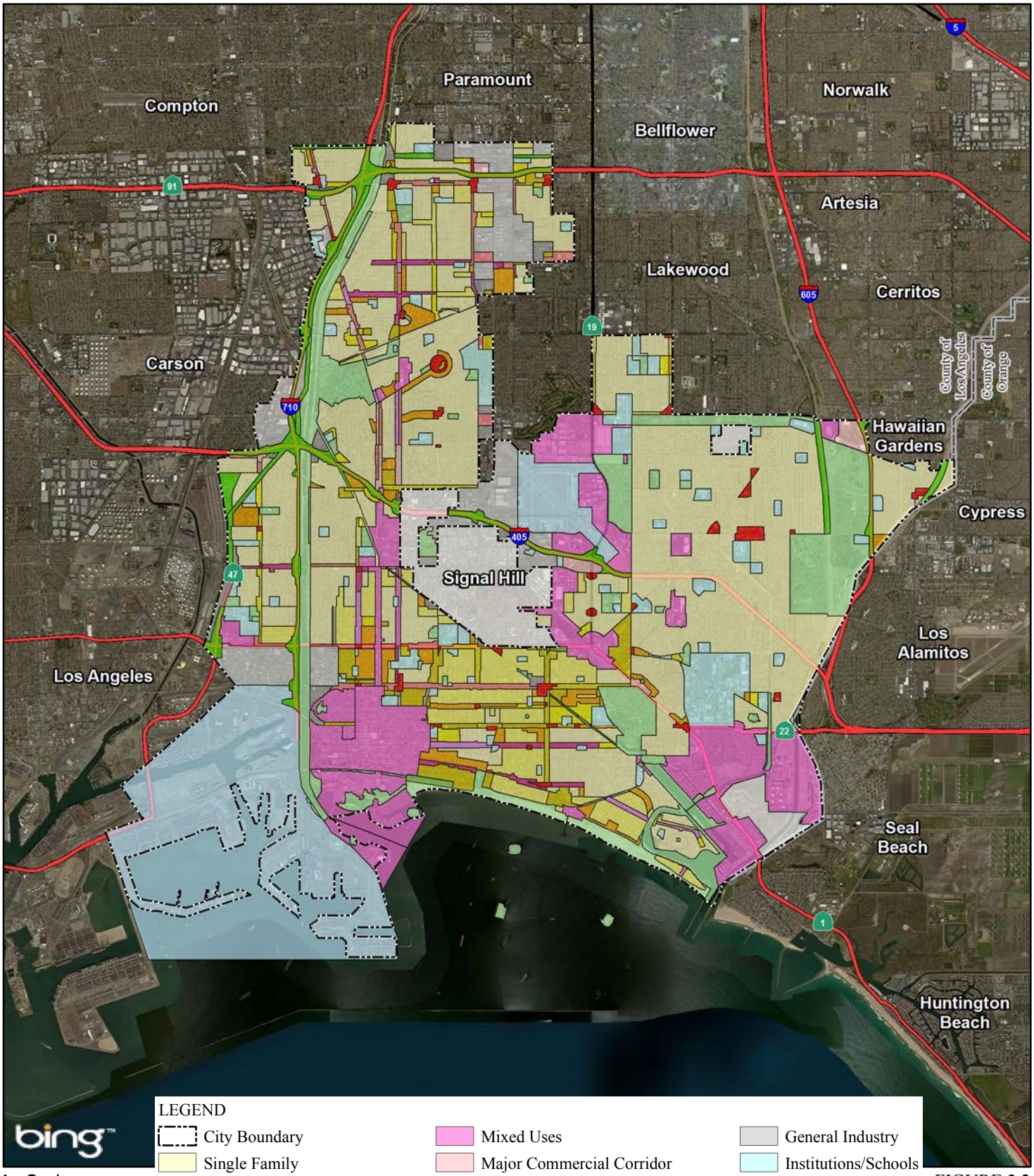
This page intentionally left blank

the coastal zone boundary. Approval of the LUE would also result in updates to the City's LCP, Zoning Code, and adopted planned development areas to implement new long-range development plans within coastal areas of the City.

Compared to the existing LUE, the proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach of segregating property within the City through traditional land uses designations and zoning classifications. Refer to Figure 2.2, Existing Land Uses, for an illustration of the City's existing General Plan Land Use Map. The updated LUE would establish 11 primary PlaceTypes that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land uses within these areas (refer to Figure 2.3, Proposed PlaceTypes Map). Each PlaceType would be defined by unique land use, form, and character-defining goals, policies, and implementation strategies tailored specifically to the particular application of that PlaceType within the City. The proposed 11 PlaceTypes are listed and briefly summarized below.

1. **Open Space.** The Open Space PlaceType aims to promote and conserve the emotional and physical health of the City's residents through the provision of natural environments, which include recreational open space; scenic, natural, or cultural features; and utilities and/or infrastructure with environmentally sensitive resources. By establishing this PlaceType, the City hopes to preserve land and water areas that are undeveloped for use as passive/active recreational uses, conservation purposes, historic or scenic purposes, or visual relief from an area generally characterized by urban development. The maximum height of support structures allowed under this PlaceType is 28 feet (ft) (2 stories).
2. **Founding Neighborhood.** The Founding Neighborhood PlaceType is defined by neighborhoods with post-World War II suburban housing, which are predominately characterized by single-family uses separated by large commercial centers. The purpose of this PlaceType is to preserve older urban neighborhoods and historic districts within the City that contain a mix of land uses and housing types, while simultaneously promoting new infill development in the form of residential single- and multi-family uses and neighborhood-serving commercial uses. As such, the establishment of this PlaceType would create transition areas within the City between single-family neighborhoods, neighborhood edges, and key intersections. This PlaceType would also encourage neighborhood enhancements aimed at increasing mobility (e.g., bikeway and pedestrian connections), visual improvements (e.g., façade improvements), and sustainability improvements (e.g., transit improvements to reduce vehicular emissions). The maximum thresholds of density, intensity, and height allowed under this PlaceType are 7–8 dwelling units per acre (du/ac), 0.25 to 0.50 floor area ratio (FAR), and 28 ft (2 stories), respectively.
3. **Multiple-Family Residential- Low and Moderate.** The Multiple-Family Residential PlaceType aims to provide a variety of housing options (i.e., condominium duplex, triplex, and garden apartment uses) to meet the range of lifestyles of the City's community members. This PlaceType would be scattered throughout the City and is intended to be utilized as a buffer use between less intense and more intense residential neighborhoods. The Multiple-Family Residential PlaceTypes also are intended to be pedestrian-oriented and would mostly be located in areas with bus and light rail services. The maximum thresholds of density, intensity, and height allowed under the on lots greater than 120 ft, 0.25 to 0.50 FAR, and 38 ft (3 stories), respectively. The maximum Low

This page intentionally left blank



LEGEND

- City Boundary
- Single Family
- Mixed Style Homes
- Townhomes
- Moderate Density Residential
- High Density Residential
- Urban High Density Residential
- High Rise Residential
- Mixed Uses
- Major Commercial Corridor
- Traditional Retail Strip Commercial
- Pedestrian-Oriented Retail Strip
- Mixed Retail/Residential Strip
- Mixed Office/Residential Strip
- Shopping Nodes
- Restricted Industry
- General Industry
- Institutions/Schools
- Open Space/Parks
- Harbor/Airport
- Right-Of-Way
- Not In Long Beach

LSA

FIGURE 2.2

0 4500 9000
FEET

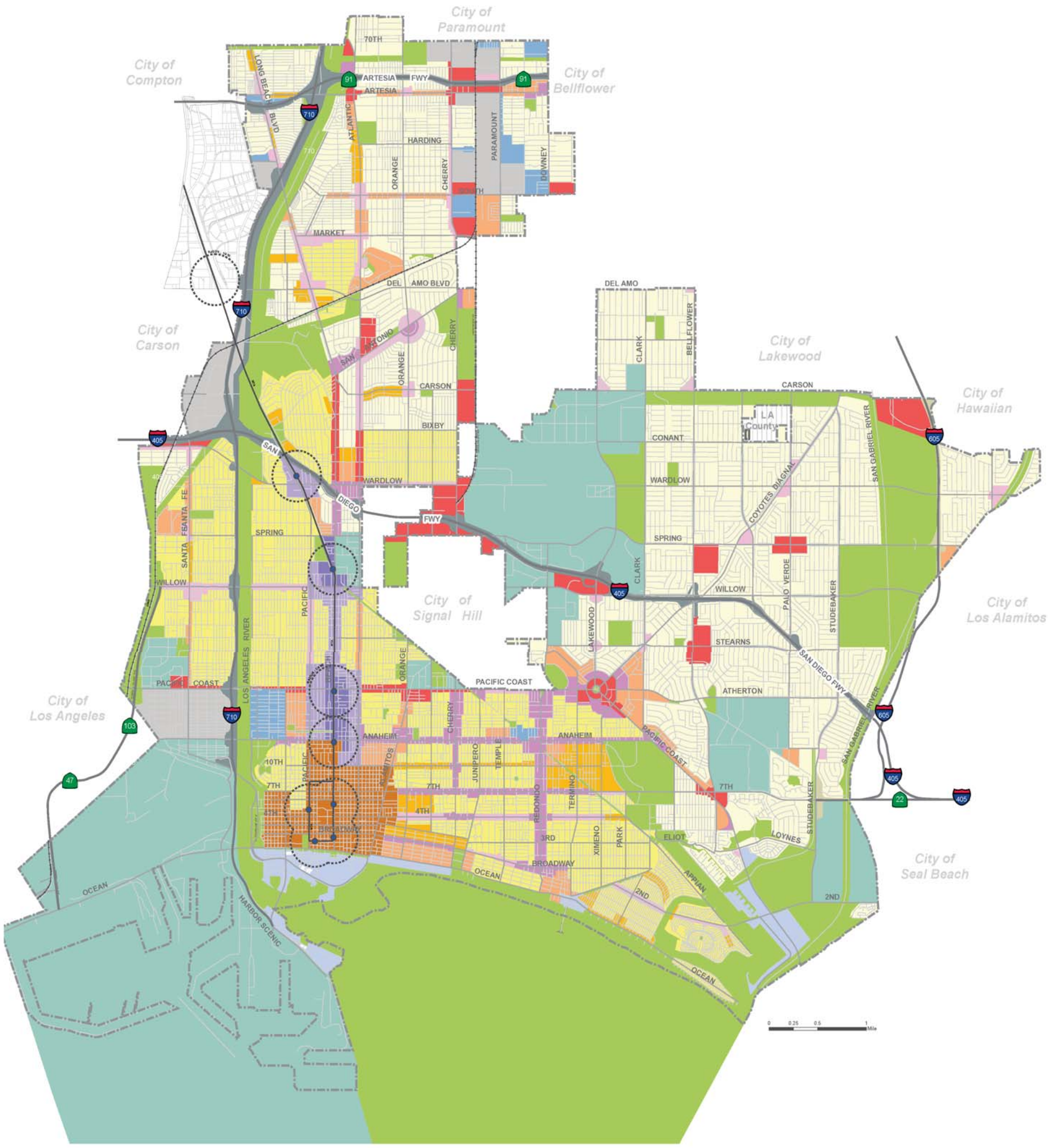
Long Beach General Plan
Land Use and Urban Design Elements

Exising Land Uses

SOURCE: Bing Maps (2013); City of Long Beach (2014)

I:\CLB1505\GIS\EXLU.mxd (5/13/2015)

This page intentionally left blank



LSA

FIGURE 2.3

SOURCE: 2015 Long Beach General Plan Land Use Element

Long Beach General Plan
Land Use and Urban Design Elements
Proposed PlaceTypes Map

I:\CLB1404\G\Proposed Placetypes.cdr (12/4/14)

This page intentionally left blank

Multiple-Family Residential PlaceType is 3 du/ac on lots less than or equal to 120 ft in width and 29 du/ac thresholds of density, intensity, and height allowed under the Moderate Multiple-Family Residential PlaceType are 3 du/ac on lots less than or equal to 120 ft in width, 48 du/ac on lots 120 to 180 ft in width; and 62 du/ac on lots greater than 180 ft in width; 0.5 to 0.75 FAR; and 58 ft (6 stories), respectively.

4. **Neighborhood-Serving Centers and Corridors- Low and Moderate.** Commercial corridors and centers are located throughout the City. As such, the Neighborhood-Serving and Corridors PlaceType aims to locate low- to moderate- intensity mixed-uses (i.e., residential/retail) near these areas in an effort to provide goods and services near housing. The intention of this PlaceType is to strengthen the identity of those neighborhoods surrounding commercial corridors and centers, to enhance pedestrian and bicycle connections, and to provide community gathering places. The maximum thresholds of density, intensity, and height allowed under the Low Neighborhood-Serving Centers and Corridors PlaceType are 6 du/lot and 44 du/ac, 0.50 to 1.00 FAR, and 38 ft (3 stories), respectively. The maximum thresholds of density, intensity, and height allowed under the Moderate Neighborhood-Serving Centers and Corridors PlaceType are 9 du/lot and 54 du/ac, 1.00 to 1.50 FAR, and 58 ft (5 stories[1]), respectively.

5. **Transit-Oriented Development-Low and Moderate.** The City is currently served by bus, shuttle, and other transit services. In particular, the Metro Blue Line light rail has a significant presence along Long Beach Boulevard and the City's downtown area. As such, the Transit-Oriented Development PlaceType aims to provide multi-family residential uses near areas adjacent to the Metro Blue Line in an effort to establish regional transit connections and promote transit use in the City. The Transit-Oriented PlaceType would also encourage the continuation of mixed-uses (residential and community-serving commercial uses) at a higher intensity to promote a pedestrian-friendly, active streetscape. Although this PlaceType has specifically been concentrated near Metro Blue Line stations, this PlaceType could also be applicable to areas containing future transit systems in the City. The maximum thresholds of density, intensity, and height allowed under the Transit Oriented Development PlaceType are 7 du/lot and 62 du/ac, 1.00 to 1.50 FAR, and 80 ft (7 stories), respectively.

6. **Community Commercial Centers and Corridors.** Although the aforementioned PlaceTypes emphasize the City's transition to allow for more mixed-uses, the City is also aware of the community's need for auto-oriented goods and services. As such, the Community Commercial Centers and Corridors PlaceType emphasizes this need by allowing for auto-oriented commercial development along primary arterials in the City, with residential uses strictly prohibited. It is important to note that while this PlaceType would accommodate auto-oriented commercial uses; these areas would be designed to be consistent with any surrounding neighborhood developments and would also be served, where possible, by transit stops to encourage alternative modes of transportation. The maximum thresholds of intensity and height allowed under the Community Commercial Centers and Corridors PlaceType are 0.25 to 1.00 FAR and 40 ft (2 stories), respectively.

7. **Industrial.** The Industrial PlaceType would allow for light industrial research parks, warehousing or storage activities, industrial manufacturing, and machining operations in areas generally separated from residential uses. The intention of this PlaceType is to preserve and protect

[1] In some areas designated as Moderate Neighborhood-Serving Centers and Corridors, the maximum height of 5 stories, or 58 ft, may be extended.

industrial lands in the City and generally discourage the conversion of these lands to non-industrial uses. Non-industrial uses, with the exception of on-site caretaker units and commercial accessory units required to serve the Industrial PlaceType, are strictly prohibited within this PlaceType. The maximum height allowed under Industrial PlaceType is 40 ft (2 stories).

8. **Neo Industrial.** The Neo Industrial PlaceType encourages light industrial activities, particularly those related to innovative start-up businesses and creative design offices in the arts, engineering, sciences, technology, media, education, and information industries. As permitted by the updated LUE, office uses may comprise 50 percent of the uses within this PlaceType. It should be noted that limited retail and live/work uses that support the Neo Industrial uses are also allowed within this PlaceType. It is the intent of the City that by establishing this PlaceType, innovative and small incubator businesses would co-locate and form symbiotic relationships with other small businesses in the area. Neo Industrial PlaceTypes would generally be located in areas above Market Street in North Long Beach, the Zafaria area on Anaheim Street and Obispo Avenue, and the Magnolia Industrial Group area located between Anaheim Street and Pacific Coast Highway (PCH) west of Magnolia Avenue. The maximum thresholds of density, intensity, and height allowed under the Neo Industrial PlaceType are 6 du/lot and 36 du/ac, 0.50 to 1.00 FAR, and 45 ft (3 stories), respectively.

9. **Regional-Serving Facility.** Due to its size and location between the City of Los Angeles and the County of Orange, the City of Long Beach is home to a variety of regional-serving facilities that serve the sub-region and region. Primary examples of these facilities include, but are not limited to, the following: medical centers; the Port of Long Beach; Long Beach City College; the Long Beach Airport; California State University Long Beach; the Department of Motor Vehicles; the City's Health Department; and Ability First (provides programs for children and adults with disabilities or special needs). These facilities generally consist of large properties within the City and are generally disjointed from other regional-serving facilities within the City. As such, the Regional-Serving Facility PlaceType would increase connectivity between these facilities to foster their growth and economic vitality. The height limitations vary by the facility proposed for this PlaceType designation. For example, within the area designated with California State University Long Beach facilities, the height limitation is 150 ft (15 to 18 stories) and in areas near the Long Beach Airport, height limitations are set at 100 ft (10 stories).

10. **Downtown.** The Downtown PlaceType encompasses the area overlooking the Pacific Ocean where the Los Angeles River and the Port of Long Beach meet. In its existing setting, the Downtown area consists of offices, and government and tourism uses, and is home to several historic and cultural districts. The 2012 Downtown Plan currently serves as the land use plan guiding development in the Downtown area; therefore, the establishment of the Downtown PlaceType in the updated LUE would serve to support the current Downtown Plan to ensure high-quality development in this area. Specifically, the Downtown Plan, as well as the updated LUE, call for a mix of land uses and housing types and emphasize the placement of shops, restaurants, and cafes on the ground floor of these uses in the Downtown area. The height limitations proposed for this PlaceType designation are set forth in the existing 2012 Downtown Plan.

11. **Waterfront.** The Waterfront PlaceType includes three primary areas along the City's shoreline, including the Downtown Shoreline waterfront, the Belmont Pier and Pool Complex area, and the Southeast Area Development Improvement Plan (SEADIP) area. Specifically, the Waterfront PlaceType would encourage high-intensity, compact, and diverse uses (e.g., housing, offices, hotels, and tourism attractions) in the Downtown Shoreline Area, such as the Queen Mary and the

Long Beach Aquarium of the Pacific. The Belmont Pier and Pool Complex area is specifically targeted as an area with significant opportunities for improvements that would revitalize this area and improve recreational opportunities for residents and visitors to the City utilizing the Belmont Pool Complex. Lastly, the SEADIP area, which is comprised of 1,500 ac and includes five commercial areas and the Marina Pacifica condominium complex, is targeted as an area with new opportunities for pedestrian-oriented development and the revitalization of the Los Cerritos Wetlands. The City is currently updating SEADIP in an effort to encourage responsible growth while balancing resource preservation in this area of southeast Long Beach. It is the City's stated vision in the updated LUE that three Waterfront PlaceTypes should be characterized by mixed-uses, and because of the location of this PlaceType adjacent to waterways, the LUE calls for pedestrian-oriented development to decrease environmental impacts and the creation of recreation uses to allow visitors to access waterways within the Waterfront PlaceType. In addition, future development within both the Waterfront PlaceType and the California Coastal Zone would be subject to the goals, policies, and strategies established in the updated LUE and would be required to comply with the City's Local Coastal Program, which regulates land use in areas within the California Coastal Zone. The height limitations proposed for this PlaceType designation vary by area. For example, in waterfront areas near the City's downtown, height limitations reach up to 250 ft (16 stories and over), whereas in waterfront areas further east along the City's coastline, height limitations are set at 38 to 45 ft (3 stories).

The updated LUE would establish the Open Space PlaceType along the Los Angeles River and would allow for a greater mix of residential and mixed-use PlaceTypes within existing neighborhoods in the North Long Beach area. Additionally, the proposed LUE would consolidate commercial activities into neighborhood-serving areas and would buffer industrial activities from existing neighborhoods by encouraging the conversion of some industrial uses to Neo Industrial activities and commercial uses. The proposed LUE would consolidate commercial activities along major arterials, encourage infill housing, convert industrial activities to commercial uses, and create recreation and green areas in the Bixby Knolls area in an effort to enhance the urban character of this area in the City. Similarly, the proposed LUE would enhance the Westside and Wrigley area by consolidating commercial activities along major arterials, creating open space buffers between industrial activities and surrounding neighborhoods, creating green and open space areas along the Los Angeles River, and implementing a variety of mobility improvements (e.g., creating bicycle paths, pedestrian bridges, and intersection improvements) to increase connectivity within this area of the City. In the Eastside area of the City, the proposed LUE would encourage multi-family housing in areas served by public transit, improve streetscapes to improve walkability, create additional recreation and open space areas, and improve pedestrian and bicycle facilities to increase connectivity in this area of the City.

In addition to establishing the aforementioned PlaceTypes in place of traditional land use designations in the City, the updated LUE also identifies the following goals to guide the use of land and urban form within these PlaceTypes:

- **Goal No. 1: Implement Sustainable Planning and Development Practices**
  - Implementation of this goal includes creating compact new developments and walkable neighborhoods in the downtown area, along corridors, and surrounding transit stations in an effort to minimize the City's contribution to greenhouse gas emissions (GHGs) and energy usage.

Goal No. 2: Stimulate Continuous Economic Development Growth

- Implementation of this goal includes the creation of PlaceTypes that would allow for large businesses in the Downtown area, small businesses in transition neighborhoods, and incubator start-up businesses in the Neo Industrial area, while also maintaining and preserving existing employment opportunities at the City's regional facilities (e.g., California State University, Long Beach) and employment centers (e.g., Port of Long Beach and Douglas Park).

- **Goal No. 3: Accommodate Strategic Growth and Change**
  - Implementation of this goal involves locating growth in the Downtown area, around regional-serving facilities, along major corridors, and in transit-oriented development areas. Additionally, this goal would be implemented by creating and preserving open space, converting industrial areas to neo industrial uses, promoting regional-serving uses, converting industrial uses to commercial uses (along Cherry Avenue and Temple/Redondo Avenue), and revitalizing the Waterfront PlaceType areas.
- **Goal No. 4: Support Neighborhood Preservation and Enhancement**
  - Implementation of this goal includes preserving low-density neighborhoods while improving pedestrian, bicycle, and transit access in these areas. Further, this goal would be implemented by developing commercial and retail uses along the periphery of these low-density residential neighborhoods to ensure increased access to goods and services.
- **Goal No. 5: Diversify Housing Opportunities**
  - Implementation of this goal consists of the provision of a variety of housing types within the Multiple-Family, Neighborhood Center and Corridor, Transit-Oriented Development, Neo Industrial, Downtown and Waterfront PlaceTypes. Further, new development in the City would be encouraged, if not required, to provide a mix of market-rate and affordable housing units to meet this goal.
- **Goal No. 6: Ensure Fair and Equitable Land Use**
  - Implementation of this goal would occur by making planning decisions that would ensure the fair and equitable distribution of services, amenities, and investments throughout the City.
- **Goal No. 7: Provide Reliable Public Facilities and Infrastructure**
  - Implementation of this goal would occur by expanding and maintaining the current infrastructure to serve new and existing developments in the City. Priority improvements will be focused in those areas where existing deficiencies are present.
- **Goal No. 8: Increase Access to Green and Open Space**
  - Implementation of this goal would occur through the creation of urban open spaces and greenscapes and providing for clean beaches, waterways, preserves, and parklands. In addition, the City would implement this goal by providing for additional parkland in the north, west, and central areas of the City.

- **Goal No. 9: Restore and Reconnect with Local Natural Reserves**
  - Implementation of this goal would occur through the utilization of clean energy, best management practices (BMPs), and current technologies. The City would also continue to implement efforts to preserve water bodies, natural areas, and wildlife habitats.

The overall goal of updated LUEs would be to guide planning decisions towards a high-quality, balanced community that would encourage innovative land use practices while maintaining the small-town feel of existing neighborhoods and the urban land use pattern in downtown Long Beach and in major centers. The establishment of PlaceTypes in place of standard land use designations would allow for greater flexibility in development types to create distinct residential neighborhoods, employment centers, and open space areas. The implementation of the goals listed above would accommodate new business opportunities, expand job growth, revitalize corridors, enhance existing neighborhoods, create a smarter city, protect the environment, and encourage sustainable planning practices and development. As such, the overarching goal of the LUE would be to create and maintain a healthy, equitable, and sustainable City for residents, workers, and visitors to enjoy.

2.2.2 Urban Design Element

The Urban Design Element (UDE) would be an entirely new element of the City's General Plan. The decision to include an UDE in the City's General Plan grew from the City's stated need to provide an urban framework that addresses the varying aesthetic characteristics associated with the historic districts, traditional neighborhoods, auto-oriented commercial centers, urbanized centers, and corridors located throughout the City. As the City continues to evolve, the UDE seeks to shape the urban environment by preserving the character of existing neighborhoods that define the City's unique character while allowing for the continued evolution and improvement of the City in areas targeted for new development.

Specifically, the UDE aims to improve the City's PlaceTypes by creating great places, improving the urban fabric, public spaces, and defining edges, thoroughfares, and corridors. It is the City's intention that creating great places would provide gathering spaces for community members to meet and provide a space for spontaneous activities to occur. By improving the urban fabric, the City would allow for new development that would complement the existing historical development while serving as a unique and distinctive feature of the City.

Similar to the concept of creating great places, the City aims to provide public spaces to allow for community engagement opportunities. Last, the creation of edges, thoroughfares, and corridors would define the larger commercial and business centers of the City while also integrating pedestrian amenities that would provide transitions into adjacent PlaceTypes. Examples of such pedestrian amenities include the creation of "public rooms" where pedestrians can dine and gather along street frontages adjacent to ground-floor cafes and retail uses.

The aforementioned overarching goals of the UDE would be achieved through a series of more specific goals and strategies tailored to certain areas within the City. The following discussion outlines these goals and strategies:

- **Great Places.** The City defines Great Places as those areas within a community that have functional neighborhoods, aesthetic spaces, healthy and sustainable activities, are economically viable, support social and cultural vitality, and promote the arts. The City would create such places by improving the connectivity, and the visual appearance of the development and public spaces, promoting sustainable design practices, encouraging design techniques that foster economic development, preserving historic districts and the unique character of each neighborhood, providing for public art, and expanding the unified sign program to increase wayfinding within neighborhoods and PlaceTypes.
- **Urban Fabric.** The City's Urban Fabric is defined as the man-made and natural features in the City and the combination of these components that shape the human experience of the City. Specific ways the City would improve its urban fabric include creating complete neighborhoods and community blocks, properly placing and designing new development to prevent visual and land use conflicts, promoting compact urban and infill development, clearly defining boundaries between natural and urbanized areas, preserving iconic buildings, and providing pedestrian furniture and wide sidewalks to create walkable blocks.
- **PlaceTypes.** As previously stated, the updated LUE proposes to adopt PlaceTypes in place of traditional land use designations. The UDE is consistent with the aforementioned land use intentions, including the specified densities and intensities, associated with each PlaceType.
- **Public Places.** The UDE categorizes public spaces into the following seven categories: (1) scenic routes, natural areas, watersheds and views, (2) open space and parks, (3) plazas, squares, and other publicly accessible private spaces, (4) community facilities, (5) infill place spaces (e.g., gardens, parks, and plazas), (6) interstitial spaces (i.e., parklets and bulbouts), and (7) temporary spaces. Specifically, the UDE calls for the preservation of the City's natural features and the maintenance and addition of open space and parks throughout the City. Additionally, the UDE aims to provide public spaces throughout the community, parks, and plazas at infill sites, and parklets along sidewalks. The UDE also aims to enhance the use of community facilities and to promote temporary uses that encourage activity and entertainment.
- **Edges, Thoroughfares, and Corridors.** This portion of the UDE aims to improve streetscapes and sidewalks in the City. Specifically, the City aims to encourage building form and design to improve the interface between buildings and streets, develop areas along public sidewalks that promote streets as "public rooms," design parking lots and access points to be pedestrian-friendly, provide buffers along streetscapes to buffer parking areas and promote walkability, provide bicycle infrastructure, establish safe transit infrastructure, and design streetscapes utilizing sustainable streetscape strategies.

In addition to creating great places, urban fabrics, public spaces, and defining edges, thoroughfares, and corridors, the City also intends to utilize the UDE to foster healthy, sustainable neighborhoods; promote compact and connected development; minimize and fill in gaps in the urban fabric of existing neighborhoods; improve the cohesion between buildings, roadways, public spaces, and people; and improve the economic vitality of the City.

By implementing the goals and strategies in the specific target areas described in detail above, the UDE aims to strengthen the existing areas of the City that define its unique character. In addition, the UDE aims to decrease land use and visual conflicts in the City to ensure that the City's PlaceTypes are defined as individually unique areas representative of their respective location within the City.

It is important to note that while the LUE and UDE would guide new development and improvements in the City, the future physical improvements associated with changes in the LUE and UDE would be subject to further environmental review on a project-specific basis. In other words, each future project would be subject to project-level CEQA review requirements at the time it is proposed for consideration by the City. Therefore, the impact analysis contained in this document addresses the potential environmental implications associated with the adoption of the LUE and the UDE, not a project-specific development or proposal.

This page intentionally left blank

3.0 ENVIRONMENTAL CHECKLIST FORM

1. Project title: General Plan Land Use and Urban Design Elements Project

2. Lead agency name and address:

City of Long Beach, Long Beach Development Services, Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

3. Contact person and phone number:

Craig Chalfant, Planner
Long Beach Development Services, Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802
Phone: (562) 570-6368

4. Project location: All areas within the City limits of the City of Long Beach.

5. Project sponsor's name and address:

City of Long Beach, Long Beach Development Services, Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

6. General Plan designation: The Land Use Element (LUE) is a State-required element of the City's General Plan, and the Urban Design Element (UDE) is an optional Element that the City has decided to incorporate into its General Plan.

7. Zoning: Both the Land Use and Urban Design Elements involve changes to all zoning districts within the City. As such, the City will subsequently engage in a comprehensive update to its Zoning Code to accommodate the proposed changes outlined in the Land Use and Urban Design Elements.

8. Description of project: (Describe the whole action involved, including, but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The proposed project includes the approval of an updated LUE and an entirely new UDE for incorporation into the City's General Plan. The proposed LUE and UDE propose intensifying densities along the corridors in the City that provide the more robust transit and mobility options, using smart growth concepts, and encouraging urban infill development.

9. Surrounding land uses and setting: Briefly describe the project's surroundings: The City of Long Beach is located in a highly urbanized area in southwest Los Angeles County. Surrounding Cities include Los Angeles (including Wilmington and the Port of Los Angeles), Carson, Compton, Paramount, Bellflower, Lakewood, Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach. The City is also located adjacent to the unincorporated communities of Rancho Dominguez and Rossmoor. The City of Signal Hill is also completely surrounded by the City of Long Beach. Refer to Figure 2.2 for an illustration of surrounding communities.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.): N/A

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" prior to implementation of mitigation as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agriculture Resources	☒ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☒ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☒ Land Use/Planning	☐ Mineral Resources	☒ Noise
☒ Population/Housing	☒ Public Services	☐ Recreation
☒ Transportation/Traffic	☒ Utilities/Service Systems	☒ Mandatory Findings of Significance

DETERMINATION (to be completed by the Lead Agency):

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION (MND) will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.

☐ I find that the proposed project MAY have a "potentially significant" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date: May 18, 2015

Printed Name: Craig Chalfant

For: City of Long Beach

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less Than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9) The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significant.

This page intentionally left blank

4.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

4.1 AESTHETICS

Would the project:

		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

Discussion:

a) Have a substantial adverse effect on a scenic vista?

Potentially Significant Impact. A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Aesthetic components of a scenic vista generally include (1) scenic quality, (2) sensitivity level, and (3) view access. Although the City does not provide a definition of scenic vistas, potential scenic vistas can include areas with views of the coastline, mountains, or other prominent scenic features in a region that are considered significant visual resources for residents and businesses.

Scenic vistas afforded to the City include views of the Pacific Ocean and the Port of Long Beach to the south, distant views of the San Gabriel and San Bernardino Mountains to the north, and distant views of the Santa Ana Mountains to the east.

Land Use Element. The proposed LUE would allow for significantly greater building heights and density along primary arterials, major transit routes, in the downtown area, and along the waterfront, than currently allowed under the City's existing General Plan LUE (1989) and current Zoning Code. As such, the increased height and density associated with the proposed LUE could result in the obstruction of scenic views of the Pacific Ocean and the Port of Long Beach. Therefore, potential impacts to scenic vistas associated with the proposed LUE will be discussed further in the EIR.

Urban Design Element. While the proposed LUE would allow for high-density development in areas that could potentially result in the partial obstruction of public views of the coastline, approval of the proposed UDE would establish design guidelines that would focus on improvements to the aesthetic character of existing and future development in the City. Therefore, approval of the UDE would not result in significant adverse impacts related to a scenic vista, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. SR-1 (PCH), which traverses the southern portion of the City from northwest to southeast, is currently designated as an Eligible State Scenic Highway, but is not officially designated. [1] Although the City's General Plan Scenic Routes Element (1975) designates scenic roadways in the City for which view protection should be considered, there are no State-designated scenic highways in the City. This element would be replaced by the proposed UDE, which designates Scenic Routes and outlines goals and policies to ensure the continued preservation of scenic views along these routes. Approval of the proposed project constitutes a policy/planning action and does not include any physical improvements associated with changes in the proposed LUE or UDE. As such, no rock outcroppings or trees would be impacted as a result of project approval. Further, the proposed project, in particular the UDE, would set forth goals, policies, and objectives aimed at improving the aesthetic character of future development in the City, thus enhancing views along scenic routes and improving the overall visual quality of the City. Therefore, approval of the proposed project would not result in impacts related to scenic resources within a State-designated Scenic Highway.

Due to the City's rich historic and cultural history, the City has designated numerous building and neighborhoods as locally significant "Historic Districts" and "Historic Landmarks" in the Historic Preservation Element (2010) of the General Plan. Through the establishment of PlaceTypes throughout the City, the updated LUE would aim to encourage new development while preserving the character of existing historic buildings and neighborhoods throughout the City. PlaceTypes specifically targeted for the retention of historic buildings include the Founding Neighborhood PlaceType, the Multiple-Family Residential (Low and Moderate) PlaceType, the Downtown PlaceType, and the Waterfront PlaceType. Additionally, the proposed UDE includes a number of goals, policies, and strategies aimed at the preservation of the historic character of City-designated historic buildings and districts. Any physical improvements proposed following the approval of the proposed UDE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, because there are no State-designated scenic highways in the City, and because the proposed project aims to preserve historic resources within the City, approval of the proposed project would not result in impacts related to the damage of a historic resource within a State-designated Scenic Highway. This topic will not be analyzed further in the EIR.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Potentially Significant Impact.

Land Use Element. The proposed LUE would establish a number of PlaceTypes designations, each with its own specific goals, policies, and strategies aimed at guiding development and shaping the overall visual character of the City. As previously stated, the LUE would allow for significantly greater building heights and densities along primary arterials, major transit routes, in

[1] California Department of Transportation (Caltrans), Scenic Highways. Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm (accessed February 2015).

the downtown area, and along the waterfront, than currently allowed under the existing General Plan LUE and Zoning Code. This proposed increase in height and density could result in significant changes to the existing visual character of these areas. Therefore, potential impacts to the existing character of these areas associated with the proposed LUE will be discussed further in the EIR.

Urban Design Element. The proposed UDE would further the goals, policies, and strategies outlined for each PlaceType in the LUE by establishing a separate set of goals, policies and strategies aimed specifically at guiding urban design and form throughout the City. Therefore, because the proposed UDE would establish design guidelines aimed at improving the visual character of existing and future development in the City, approval of the UDE would not result in significant adverse impacts related to the degradation of the visual character of the City. This topic will not be analyzed further in the EIR.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially Significant Impact. The introduction of new light sources within the City could potentially impact nighttime views within the City and from surrounding areas. As such, the following discussion analyzes potential impacts resulting from approval of the proposed project with respect to the introduction of new light sources and glare.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in the introduction of new sources of light and glare. Therefore, impacts related to light and glare associated with new development allowed under the proposed LUE will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the type and placement of light sources within each PlaceType. For example, the UDE identifies specific areas within each PlaceType where the addition of street lighting, security lighting, and pedestrian-scaled lighting is encouraged. Additionally, the proposed UDE aims to define the urban fabric of existing and future neighborhoods and community blocks through the addition of lighting, landscaping, and signage that is both visually enhancing and sensitive to any adjacent residential uses. Although the UDE specifically addresses light and glare by identifying areas requiring the addition of new light sources, approval of the UDE itself does not include any physical improvements or associated light sources. Therefore, the proposed UDE would not introduce new sources of light and glare within the City. Impacts are considered less than significant, and no mitigation would be required. This topic will not be analyzed further in the EIR.

4.2 AGRICULTURE & FOREST RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Discussion:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The City is highly urbanized and is almost entirely developed. As such, there are no areas within the City that are designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on maps prepared as part of the Farmland Mapping and Monitoring Program of the California Resources Agency. The proposed project would not convert farmland to a nonagricultural use or result in the conversion of farmland to a nonagricultural use. Further, approval of the proposed LUE would allow for community gardens, urban agriculture, farmer's markets, and school gardens to encourage urban agricultural activities. Therefore, no adverse impacts to agricultural resources would occur, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. There are no areas currently zoned in the City for agricultural uses; therefore, approval of the proposed project would not conflict with existing zoning for agricultural uses or a Williamson Act contract or contribute to environmental changes that would result in the conversion of farmland to a nonagricultural use. Neither the LUE nor the UDE contain strictly agricultural PlaceTypes, and no new agricultural zones would be created with their approval. Therefore, no impacts to zoning for agricultural resources would occur, and no mitigation would be required. This topic will not be analyzed further in the EIR.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. As previously stated, the City of Long Beach is highly urbanized and is almost entirely developed. As such, there are no properties within the City that are currently being used for timberland production, are zoned as forest land or timberland, or contain forest land or timberland. Therefore, no impacts to forest land resources would occur, and no mitigation would be required. This topic will not be analyzed further in the EIR.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As previously stated, there are no properties within the City that contain forest land. As such, approval of the proposed project would not contribute to environmental changes that could result in conversion of forest land to a nonforest use. Therefore, no impacts to forest land would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

No Impact. The City does not contain any agricultural uses; therefore, approval of the proposed project would not convert farmland to a nonagricultural use. Likewise, the proposed project would not contribute to environmental changes that would indirectly result in conversion of farmland to nonagricultural use. Although neither the LUE nor the UDE contain strictly agricultural PlaceTypes, new agricultural uses would be created with their approval. For example, both elements would promote urban agricultural activities, community gardens, and local farm-to-table uses, consistent with the Healthy Communities Policies adopted by the City Council on October 14, 2014. Therefore, no impacts to agricultural resources would occur, and no mitigation would be required. This topic will not be analyzed further in the EIR.

4.3 AIR QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impact. The main purpose of an air quality plan is to bring an area into compliance with the requirements of federal and State air quality standards. Such plans describe air pollution control strategies to be implemented by a city, county, or region. The City is located in the South Coast Air Basin (Basin) and is subject to the South Coast Air Quality Management Air District (SCAQMD) 2012 Final Air Quality Management Plan (AQMP) for attaining California Ambient Air Quality Standards.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in an increase in traffic volumes that could result in increased air pollutant emissions. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City. Therefore, because the proposed UDE would not introduce new air pollutant emissions within the City, approval of the proposed UDE is not anticipated to result in significant impacts related to potential conflicts with the 2012 Final AQMP, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant Impact.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density

development that could potentially result in an increase in traffic volumes that could result in increased air pollutant emissions. This potential increase could result in violations of air quality standards or potentially contribute substantially to an existing or projected air quality violation. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce new air pollutant emissions within the City, approval of the proposed UDE would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and no mitigation would be required. This topic will not be analyzed further in the EIR.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Potentially Significant Impact. Ozone levels, as measured by peak concentrations and the number of days that exceed the State 1-hour standard, have declined substantially as a result of aggressive programs by the SCAQMD and other regional, State, and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the South Coast Air Basin still exceeds the State standard for 1-hour and 8-hour ozone (O_3) levels. In addition, the South Coast Air Basin was designated as an extreme nonattainment area for the federal 8-hour O_3 level. The United States Environmental Protection Agency (EPA) lowered the national 8-hour O_3 standard from 0.080 to 0.075 parts per million (ppm) on May 27, 2008. The South Long Beach air monitoring station, located at 2425 Webster Street, reported that in the past 3 years, no days were recorded as having exceedances of the State and federal 8-hour O_3 standards.

National and State standards have also been established for fine particulate matter less than 2.5 microns in size ($PM_{2.5}$), over 24-hour and yearly averaging periods. Fine particulate matter, because of the small size of individual particles, can be especially harmful to human health. Fine particulate matter is emitted by common combustion sources such as cars, trucks, buses, and power plants, in addition to ground-disturbing activities. The Basin is considered a nonattainment area for $PM_{2.5}$ at both the State and federal levels. Eight exceedances of the federal 24-hour standard for $PM_{2.5}$ were measured at the South Long Beach air monitoring station in the last 3 years.[1]

The Basin is a serious nonattainment area for the federal PM_{10} standard and a nonattainment area at the State level. No exceedances of the federal 24-hour standard for particulate matter less than 10 microns in size (PM_{10}) were measured at the South Long Beach air monitoring station in the last 3 years; however, the State standards were exceeded 2 days in that same period. No exceedances of the State or federal carbon monoxide (CO) standards have been recorded at the

[1] California Air Resources Board (ARB), 2013. iADAM Air Quality Data Statistics. Website: www.arb.ca.gov/adam/ (accessed November 14, 2014)

Long Beach monitoring station since 1991. The Basin is currently considered an attainment area for State and federal CO standards.

Table A lists the attainment status for criteria pollutants in the Basin.

Table A: Attainment Status of Criteria Pollutants in the South Coast Air Basin

	State	Federal
1-hour Ozone	Nonattainment	N/A
8-hour Ozone	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Nonattainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Nonattainment (Los Angeles County only)	Nonattainment (Los Angeles County only)
All others	Attainment/Unclassified	Attainment/Unclassified

Source: California Air Resources Board. Website: http://www.arb.ca.gov.
CO = carbon monoxide
N/A = not available
NO_2 = nitrogen dioxide
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
PM_{10} = particulate matter less than 10 microns in diameter
SO_2 = sulfur dioxide

Land Use Element. As illustrated by Table A, the Basin is considered nonattainment area for O_3, $PM_{2.5}$, PM_{10}, and lead (only in Los Angeles County). Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in a cumulatively considerable net increase of a criteria pollutant for which the Basin is nonattainment under applicable federal and State ambient air quality standards. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. As such, approval of the proposed UDE is not anticipated to have any impact on air quality emissions, including those for which the Basin is considered nonattainment under applicable federal and State standards. This topic will not be analyzed further in the EIR.

d) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. Sensitive receptors are defined in the CEQA Air Quality Handbook as children, athletes, the elderly, and sick individuals because they are considered more likely to be susceptible to negative impacts associated with air pollution.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in an increase in traffic volumes that could result in increased air pollutant emissions. This potential increase in air pollutant emissions could result in

in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. As such, approval of the proposed UDE is not anticipated to have any impact on air quality emissions that could result in the exposure of sensitive receptors to substantial pollutant concentrations. This topic will not be analyzed further in the EIR.

e) Create objectionable odors affecting a substantial number of people?

No Impact. Odor complaints are most commonly associated with agricultural land uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, and landfills, etc. The proposed LUE and UDE do not include any new odor-producing land uses that beyond existing odor-producing land uses (i.e. industrial and commercial land uses) that are allowed under the City's existing General Plan Land Use Element (1989). Further, the proposed Industrial and Neo Industrial PlaceTypes would establish setbacks and transition zones to ensure existing and future industrial uses in the City would be located at a sufficient distance from nearby existing residential uses; no residential uses are allowable within either PlaceType. As such, potential odors emanating from Industrial and Neo Industrial PlaceTypes are not anticipated to impact sensitive receptors, such as residential uses. Therefore, approval of the proposed project would result in the generation of objectionable odors. This topic will not be analyzed further in the EIR.

4.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than Significant Impact. Wildlife habitats present throughout the City include parks, nature preserves, and water body areas.

Land Use Element. The proposed LUE would establish a variety of PlaceTypes that would preserve existing wildlife habitat areas in the City. The proposed LUE would establish the Open Space PlaceType that would encourage urban green space recreation areas adjacent to wildlife habitats in an effort to provide a balance between urban development and natural habitats within the City. In addition, the LUE includes a variety of goals and strategies aimed at preserving wildlife habitat areas. For example, the LUE establishes Goal Number 9, which states "restore and reconnect with natural resources." As part of goal implementation, the City would restore existing and degraded water bodies and habitat areas (Strategy No. 19 and Policy 19-1) and would protect open space areas with known sensitive biological resources (Policy 19-3). Additionally, the LUE would encourage the creation and expansion of wildlife habitats along the Los Angeles and San Gabriel Rivers through the establishment of the Open Space PlaceType along each river. The LUE includes the establishment of the proposed Waterfront PlaceType, which would encourage

development compatible with adjacent water bodies to allow for the continued preservation of such water bodies and their dependent wildlife species.

Although the proposed LUE would encourage development patterns that would preserve wildlife habitats present throughout the City, approval of the proposed project is considered a policy/ planning action and does not include any physical improvements that would result in impacts to sensitive habitats or species. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review (including an analysis of impacts to biological resources) on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, approval of the proposed LUE would not result in substantial adverse impacts to sensitive species either directly or through habitat modification. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. Approval of the UDE would not result in any significant adverse impacts to sensitive species in the City, either directly or indirectly through habitat modifications. Therefore, the proposed UDE would not result in significant adverse impacts to wildlife habitats or candidate, sensitive, or special-status species dependent on such habitats. This topic will not be analyzed further in the EIR.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than Significant Impact.

Land Use Element. The proposed LUE would establish goals, policies, and strategies aimed at improving and maintaining existing riparian and other sensitive habitats. In addition to the aforementioned policies aimed at preserving wildlife habitats, the LUE would implement Goal Number 9, aimed at restoring natural resources in the City, through the re-establishment of native riparian habitats (Policy LU 19-2).

Although the proposed LUE would encourage the restoration of existing natural resources in the City, approval of the proposed project is considered a policy/planning action and does not include any physical improvements that would result in impacts to riparian or other sensitive habitats. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review (including an analysis of impacts to biological resources) on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, approval of the proposed LUE would not result in substantial adverse impacts to sensitive species either directly or through habitat modification. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide or direct the physical placement of future development in the City. Therefore, the proposed UDE would not result in significant adverse impacts to riparian or other sensitive habitats. This topic will not be analyzed further in the EIR.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. Due to the City's location along the coastline of the Pacific Ocean and near the Los Angeles and San Gabriel Rivers, the City is home to several wetland environments. Perhaps the most prominent of these are the Los Cerritos Wetlands, which are located near the mouth of the San Gabriel River at the Pacific Ocean.

Land Use Element. The proposed LUE would establish goals, policies, and strategies aimed at improving and maintaining existing wetland habitats. In addition to the aforementioned policies aimed at preserving wildlife habitats, the LUE would implement Goal Number 9, aimed at restoring natural resources in the City, through the restoration of existing wetland habitat areas, including the Los Cerritos Wetlands (Policy LU 19-2) and through the prevention of stormwater runoff and pollutants entering wetlands (Policy LU 19-5).

Although the proposed LUE would encourage the restoration of existing wetland habitat areas in the City, approval of the proposed project is considered a policy/planning action and does not include any physical improvements that would result in impacts to federally protected wetlands. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review (including an analysis of impacts to biological resources) on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, approval of the proposed LUE would not result in substantial adverse impacts to sensitive species either directly or through habitat modification. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. As such, approval of the UDE would not result in any significant adverse impacts to wetland habitats. Therefore, the proposed project would not result in impacts to riparian or other sensitive habitats. This topic will not be analyzed further in the EIR.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. While the UDE would not impact wildlife movement corridors, the proposed LUE would establish the Open Space PlaceType throughout the City. The establishment of the Open Space PlaceType would encourage the preservation and re-establishment of existing wildlife habitat areas in the City, which would serve to maintain existing wildlife movement corridors. Further, approval of the proposed project is considered a policy/planning action and does not include any physical improvements that would result in impacts to wildlife movement corridors. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the

proposed project would result in less than significant impacts to wildlife movement corridors. This topic will not be analyzed further in the EIR.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact. The City currently has a tree preservation ordinance that applies to City-owned trees. The proposed project would not include any physical improvements that would result in the removal of City-owned trees. Further, future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines,* and would be required to obtain ministerial permits for any trees that would be removed on City-owned property. Therefore, the proposed project would not result in potential conflicts with the City's tree preservation policy. This topic will not be analyzed further in the EIR.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. There is no adopted Habitat Conservation Plan (HCP), a Natural Community Conservation Plan (NCCP), or any other local or regional conservation plan in the City of Long Beach. Therefore, approval of the proposed project would not result in impacts to an adopted HCP/NCCP. This topic will not be analyzed further in the EIR.

4.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than Significant Impact. Due to the City's rich historic and cultural history, the City has identified and designated 17 Historic Districts and 131 Historic Landmarks in the Historic Preservation Element (2010) of the General Plan. The updated LUE would aim to encourage new development while preserving the character of existing historic buildings and neighborhoods throughout the City. The proposed UDE would also aim to preserve the historic character of City-designated historic buildings and districts through the implementation of design guidelines and policies. While approval of the proposed project would help to preserve existing historic resources within the City, the project does not include any physical improvements that would impact existing historic resources within the City. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in adverse impacts to any historical resources in the City. This topic will not be analyzed further in the EIR.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

No Impact. Approval of the proposed project would not include any physical improvements that would result in adverse impacts to archaeological resources. Further, future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts to archaeological resources. This topic will not be analyzed further in the EIR.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. Approval of the proposed project would not include any physical improvements that would result in adverse impacts to paleontological resources. Further, future individual projects resulting from the approval of the proposed project would be subject to separate environmental

review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts to paleontological resources. This topic will not be analyzed further in the EIR.

d) Disturb any human remains, including those interred outside of formal cemeteries?

No Impact. Because the proposed project would result in the adoption of two new General Plan Elements and would result in the replacement of the existing General Plan land use designations with the proposed PlaceTypes, LSA conducted Native American consultation for the proposed project consistent with Senate Bill 18 (SB 18) requirements. Based on a list of Native American contacts from the Native American Heritage Commission (NAHC) dated April 24, 2013, which was provided to LSA by the City, letters detailing the project and requesting information were sent via certified mail to 10 Native American representatives. Of the 10 people that were contacted, responses were received from two individuals: John Tommy Rosas of the Tongva Ancestral Territorial Tribal Nation and Andrew Salas of the Gabrieleno Band of Mission Indians. While both individuals noted that the City has several areas that are considered to be sensitive for cultural resources, approval of the proposed project would not include any physical improvements that would result in the disturbance of any unknown human remains. Further, future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. In accordance with the requests outlined by both Jon Tommy Rosas and Andrew Salas, these individuals and other Native American representatives will be notified of any future projects occurring in the event of project approval. Therefore, the proposed project would not result in impacts to unknown human remains. This topic will not be analyzed further in the EIR.

4.6 GEOLOGY AND SOILS

Would the project:

		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i)	Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii)	Strong seismic ground shaking?	☐	☐	☒	☐
iii)	Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv)	Landslides?	☐	☐	☒	☐
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

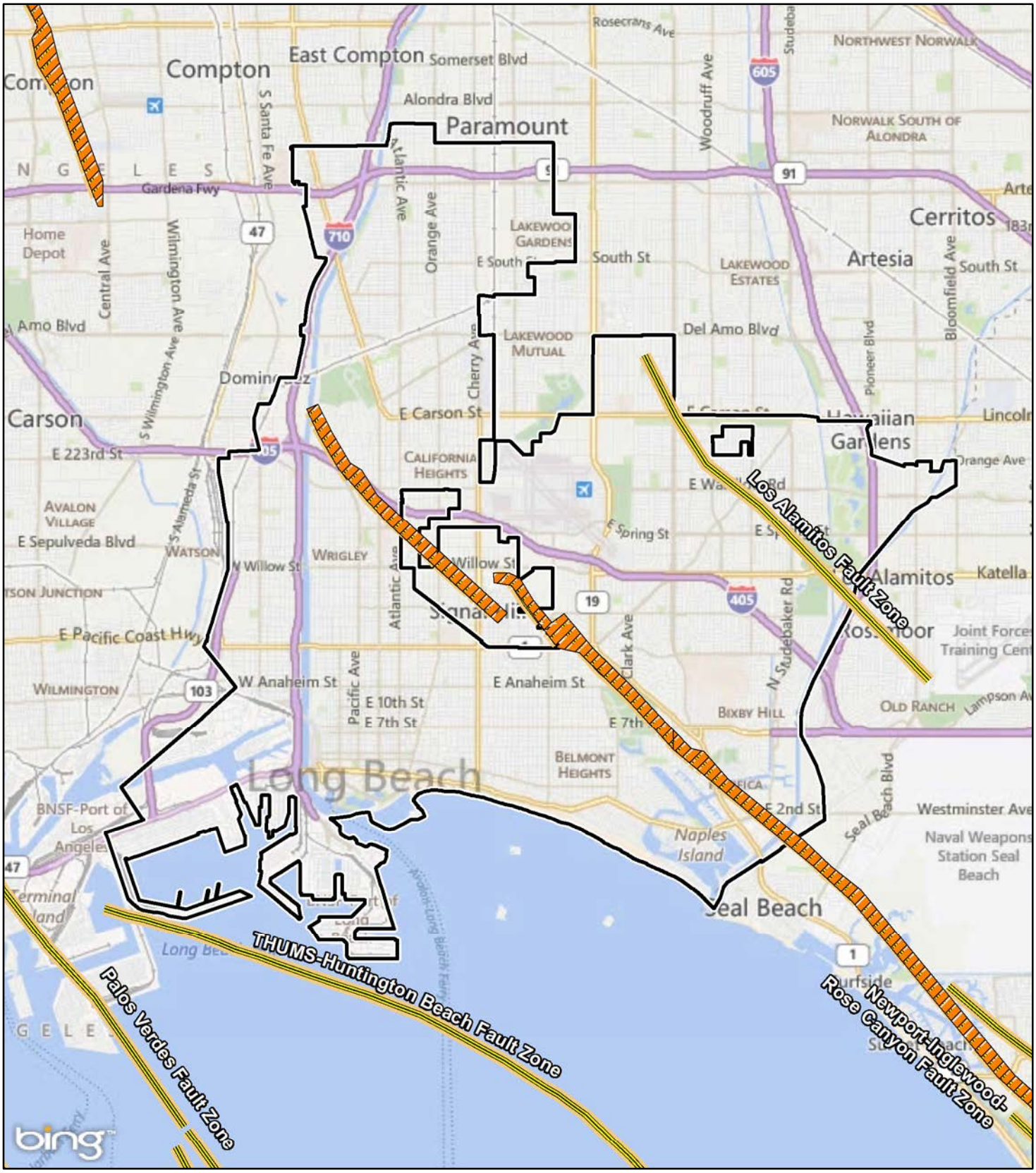
Discussion:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The City, like the rest of Southern California, is located in a seismically active area. As such, portions of the City are located within a designated Fault Zone, as designated by the California Department of Conservation and United States Geological Survey (refer to Figure 4.1, Fault Zones). However, according to the City's General Plan Seismic Safety Element (1988), the most prominent active fault in the City is the Newport-Inglewood Fault, which runs from northwest to southeast across the southern portion of the City.

Land Use Element. Although the proposed LUE would encourage and direct growth in the City, approval of the proposed project would not include any physical improvements that would be subject to impacts as a result of surface fault rupture. Further, future individual projects resulting from the approval of the proposed project would be required to be consistent with City requirements established in the Seismic Safety Element of the General Plan (1988), would include compliance with current building codes, and would be subject to separate environmental



LSA

LEGEND

Alquist-Priolo Earthquake Fault Zones

Quaternary Faults (>6 Magnitude in Last 1.6 Million Years)

FIGURE 4.1

N

0 4500 9000
FEET

Long Beach General Plan
Land Use and Urban Design Elements

Fault Zones

SOURCE: Bing Maps (2013); California Division of Mines and Geology (2001); U.S. Geological Survey (2006)

I:\CLB1505\GIS\Faults.mxd (5/13/2015)

This page intentionally left blank

review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would be subject to less than significant impacts related to surface rupture, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. As such, approval of the UDE would not result in any significant adverse impacts to wetland habitats. Therefore, the proposed project would not result in impacts related to surface rupture, and no mitigation would be required. This topic will not be analyzed further in the EIR.

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

ii) Strong seismic ground shaking?

Less Than Significant Impact.

Land Use Element. As with most areas in Southern California, damage to development and infrastructure associated with the surrounding areas could be expected as a result of significant ground shaking during a strong seismic event in the region. However, because the proposed project is a policy/planning action and does not include any physical improvements, impacts related to strong seismic ground shaking are expected to be less than significant. Further, future individual projects resulting from the approval of the proposed project would be required to be consistent with City requirements established in the Seismic Safety Element of the General Plan (1988), would comply with current building codes (including the California Building Code), and would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, impacts related to strong ground shaking are anticipated to be less than significant, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. As such, approval of the UDE would not result in any significant adverse impacts related to strong ground shaking, and no mitigation would be required. This topic will not be analyzed further in the EIR.

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction most commonly occurs when three conditions are present simultaneously: (1) high groundwater; (2) relatively loose, cohesionless (sandy) soil; and (3) earthquake-generated seismic waves. The presence of these conditions has the potential to result in a loss of shear strength and ground settlement, causing the soil to behave as a fluid and become liquefied for a short period of time.

Land Use Element. According to the City's General Plan Seismic Safety Element (1988), the City primarily consists of areas subject to minimal or low liquefaction potential, with the exception of the southeastern and western portions of the City where there is significant and moderate to significant liquefaction potential, respectively. However, because the proposed project is a policy/planning action and does not include any physical improvements, impacts related to liquefaction are expected to be less than significant. Further, future individual projects resulting from the approval of the proposed LUE would be consistent with and would comply with current building codes, and would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Specifically, future projects resulting from approval of the proposed project would be required to conduct site-specific geotechnical studies on a project-by-project basis to determine the site-specific soil properties and potential for liquefaction. Therefore, impacts related to liquefaction are anticipated to be less than significant. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. As such, approval of the UDE would not result in any significant adverse impacts related to strong ground shaking, and no mitigation would be required. This topic will not be analyzed further in the EIR.

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

iv) Landslides?

Less Than Significant Impact. Landslides are most common where slopes are steep, soils are weak, and groundwater is present. However, according to the City's General Plan Seismic Safety Element (1988), the City is not considered to have a high potential for landslides.

Land Use Element. Although the proposed LUE does not include any physical improvements, future individual projects resulting from the approval of the LUE would comply with current building codes and would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, impacts related to landslides would be less than significant, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. As such, approval of the UDE would not result in any significant adverse impacts related to landslides, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact.

Land Use Element. Approval of the proposed LUE is a policy/planning action and would not include any physical improvements that would result in substantial soil erosion or the loss of

topsoil. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. In addition, all future projects resulting from approval of the proposed LUE would be required to adhere to construction standards related to erosion control, including BMPs, to minimize impacts related to erosion and runoff to a less than significant level. Further, future projects on sites larger than one acre would also be required to comply with the National Pollution Discharge Elimination System (NPDES) program's General Construction Permit (requirements, which require the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). Therefore, the proposed LUE would not result in less than significant impacts related to soil erosion and the loss of topsoil, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. As such, approval of the UDE would not result in any significant adverse impacts related to substantial soil erosion or the loss of topsoil, and no mitigation would be required. This topic will not be analyzed further in the EIR.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. See Responses 4.6.a.iv. and 4.6.b, above. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, impacts related to unstable soils would be less than significant, and no mitigation would be required. This topic will not be analyzed further in the EIR.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant Impact. Expansive soils generally consist of clay materials that occupy more volume when wet or hydrated. Volume changes associated with moisture content in expansive soils can cause uplift in the ground when they become wet, or less commonly, cause settlement when they dry out.

Land Use Element. Approval of the proposed LUE is a policy/planning action and would not include any physical improvements that would result in impacts related to expansive soils. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed LUE would not result in less than significant impacts related to expansive soils, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the

physical placement of future development in the City. As such, approval of the UDE would not result in any significant adverse impacts related to expansive soils, and no mitigation would be required. This topic will not be analyzed further in the EIR.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The City is currently served by an existing sewer system. Currently, the Long Beach Water Department (LBWD) operates and maintains approximately 765 miles of sanitary sewer lines delivering over 40 million gallons per day (gpd) to the Los Angeles County Sanitation Districts facilities. Of the 40 million gpd of wastewater that is delivered to the Los Angeles County Sanitation District, the majority is delivered to the Joint Water Pollution Control Plan (JWPCP) located at 24501 S. Figueroa Street in the City of Carson. The remaining portion of the City's wastewater is delivered to the Long Beach Water Reclamation Plant located at 7400 E. Willow Street in the City of Long Beach. The JWPCP provides treatment for 350 million gallons of wastewater per day whereas the Long Beach Water Reclamation Plant serves wastewater treatment for 25 million gallons of wastewater per day.[1]

Land Use Element. Approval of the proposed LUE would not result in development that would trigger the need for septic tanks or any other wastewater disposal systems. Therefore, approval of the proposed LUE would not result in any impacts related to the capability of the soils to adequately support the use of septic tanks or alternative wastewater disposal systems, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE establishes goals, policies, and strategies aimed at defining the visual character of the development proposed in the City, but would not guide the physical placement of future development in the City. As such, approval of the proposed UDE would not result in any impacts related to the capability of the soils to adequately support the use of septic tanks or alternative wastewater disposal systems, and no mitigation would be required. This topic will not be analyzed further in the EIR.

4.7 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Discussion:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The following response applies to both Questions 4.7.a and 4.7.b.

Potentially Significant Impact.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in an increase in traffic volumes, and as a result, increased greenhouse gas (GHG) emissions. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City. Therefore, because the proposed UDE does not include any physical improvements that would introduce new traffic volumes and GHG emissions within the City, approval of the proposed UDE is not anticipated to result in significant impacts related to GHG emissions, and no mitigation would be required. This topic will not be analyzed further in the EIR.

4.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion:

a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

No Impact. Hazardous materials are defined as chemicals with the potential to cause harm during an accidental release or mishap, and are toxic, corrosive, flammable, reactive, and an irritant or a strong sensitizer. Hazardous substances include all chemicals regulated under the United States Department of Transportation "hazardous material" regulations and the EPA "hazardous waste" regulations. Under these regulations, hazardous wastes require special handling and disposal due to their potential to damage public health and the environment. The probable frequency and severity of consequences from the use, transport, and/or disposal of hazardous materials is affected by the type of substance, the quantity used or managed, and the nature of activities and operations.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed project is considered a policy/planning action and would not include any physical improvements that could generate hazardous materials or create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Future individual projects resulting from the approval of the proposed

LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts related to hazards generated as a result of the routine transport, use, or disposal of hazardous materials. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could generate hazardous materials or create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Therefore, the proposed UDE would not generate hazardous materials or create a significant hazard to the public or the environment, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

No Impact. See Response 4.8.a, above. This topic will not be analyzed further in the EIR.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. See Response 4.8.a, above. This topic will not be analyzed further in the EIR.

d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Hazardous Waste and Substances Sites List (Cortese List) is a document providing information about the location of known hazardous materials release sites.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed project is considered a policy/planning action and would not include any physical improvements on known hazardous materials sites. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis and may require review of the Cortese List, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts related to significant hazards to the public or the environment as a result of development on a listed hazardous materials site. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could

result in the development of a project on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, the proposed UDE would not result in any physical improvements on known hazardous materials sites, and no mitigation would be required. This topic will not be analyzed further in the EIR.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Less Than Significant Impact.

Land Use Element. The Long Beach Airport is located in the central portion of the City, north of I-405 between Cherry Avenue and Lakewood Boulevard. Although approval of the LUE would allow for greater building heights and intensity within certain PlaceTypes in the City, future development occurring as a result of approval of the General Plan Elements would not interfere with air traffic patterns, conflict with established Federal Aviation Administration (FAA) flight protection zones, or conflict with building height standards established by the FAA for structures on and adjacent to the Long Beach Airport. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, because the proposed LUE does not propose heights within the area surrounding the Long Beach Airport that would conflict with existing air traffic patterns, the proposed project would result in less than significant impacts related to safety hazards resulting from conflicts with existing air traffic patterns, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in conflicts with air traffic patterns. Therefore, the proposed UDE would not result in any physical improvements that would result in a safety hazard for people residing or working in the project area, and no mitigation would be required. This topic will not be analyzed further in the EIR.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips located in the City or in areas directly adjacent to the City. Therefore, no impacts are anticipated. This topic will not be analyzed further in the EIR.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density

development, approval of the proposed project is considered a policy/planning action and would not interfere with an adopted emergency response or evacuation plan. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines* and would be required to comply with all policies set forth in the City's General Plan Public Safety Element (1978). Therefore, the proposed project would not result in impacts related to the impairment or interference with an adopted emergency response or evacuation plan, and no mitigation is required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in conflicts with an adopted emergency response or evacuation plan. Therefore, the proposed UDE would not result in impacts related to the impairment or interference with an adopted emergency response or evacuation plan. This topic will not be analyzed further in the EIR.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The City is generally urban and built out and there are no properties adjacent to wildlands. In addition, the City is not listed a by the California Department of Forestry and Fire Protection (CAL FIRE) as a community at risk to impacts associated with a wildfire.[1] As such, there is no risk of exposing people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impacts related to wildland fires are anticipated. This topic will not be analyzed further in the EIR.

[1] CAL FIRE, Communities at Risk List. Website: http://osfm.fire.ca.gov/fireplan/fireplanning _communities_at_risk.php?filter_field=place_name&filter_text=long+beach+ (accessed April 20, 2015).

4.9 HYDROLOGY AND WATER QUALITY

Would the project:

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Discussion:

a) Violate any water quality standards or waste discharge requirements?

Less than Significant Impact. Pursuant to Section 402 of the Clean Water Act, the United States Environmental Protection Agency (EPA) establishes regulations under the NPDES program to control storm water discharges. In the City of Long Beach, the Los Angeles Regional Water Quality Control Board (RWQCB) administers NPDES permits and is responsible for establishing wastewater discharge requirements and standards. Further, as previously stated, all new developments located on properties over one acre in size are required to obtain a Construction General Permit through the Los Angeles RWQCB NPDES program and are required to prepare a SWPPP to identify potential sources of pollutant discharges that could adversely impact water quality in the City and surrounding area.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of proposed LUE is considered a planning/policy action and does not include any physical improvements that would result in the violation of water quality standards or waste discharge requirements. Future individual projects resulting from the approval of the proposed LUE would be required to obtain applicable wastewater permits and would be subject to

separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed LUE would not result in impacts related to the violation of water quality standards or waste discharge requirements, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in the violation of water quality standards or waste discharge requirements. This topic will not be analyzed further in the EIR.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less than Significant Impact. According to the LBWD, the two primary sources of potable water to the City are groundwater and imported water. Groundwater in the City originates from the underground water reservoir known as the "Central Basin." Groundwater in the Central Basin originates from the San Gabriel Mountains via the San Gabriel River. Currently, the LBWD has the authority to pump over 30,000 acre-feet of groundwater from this basin per year. Currently, the City supplies approximately 60 percent of its total potable water from groundwater. According to the 2010 Urban Water Management Plan groundwater supply for the City is considered to be very reliable, even during multi-year droughts through the year 2035 because extractions are strictly limited and because multiple forms of replenishment exist (e.g., recycled water is mixed with imported water and/or natural runoff and is allowed to percolate in the groundwater basin, San Gabriel River stream flows are used to replenish the groundwater basin, etc.)[1]

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed LUE does not include any physical improvements that would result in the substantial depletion of groundwater supplies. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts related to the depletion of groundwater supplies or interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical

[1] LBWD. 2010 Urban Water Management Plan, last revised on September 15, 2011.

improvements or changes to existing and proposed development patterns in the City that could result in in impacts related to the depletion of groundwater supplies or interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. This topic will not be analyzed further in the EIR.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than Significant Impact.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed LUE does not include any physical improvements that would result in the alteration of existing drainage patterns or alterations to the course of a stream or river. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed LUE would not result in impacts resulting from the alteration of area drainages or streams and rivers that would result in erosion or siltation on or off site, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in in impacts resulting from the alteration of area drainages or streams and rivers that would result in erosion or siltation on or off site. This topic will not be analyzed further in the EIR.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less than Significant Impact. See Responses 4.9.a through 4.9.c, above.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. See Responses 4.9.a through 4.9.c, above.

f) Otherwise substantially degrade water quality?

Less than Significant Impact. See Responses 4.9.a through 4.9.c, above.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Less than Significant Impact. According to the Federal Emergency Management Agency (FEMA), the majority of the City is located in Zone X, which is defined as the area determined to be outside the 100-year flood zone.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed LUE does not include any physical improvements that would result in the placement of housing within a flood hazard area. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not place housing within a 100-year flood hazard area, and no mitigation would be required.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in the placement of housing within a flood hazard area. This topic will not be analyzed further in the EIR.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less than Significant Impact. See Response 4.9.g, above.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less than Significant Impact. See Response 4.9.g, above. The City is not within the flood zone of a levee or dam. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

j) Inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. Seiching is a phenomenon that occurs when seismic groundshaking induces standing waves (seiches) inside water retention facilities such as reservoirs and water tanks. Such waves can cause retention structures to fail and flood downstream properties. Tsunamis are generated wave trains generally caused by tectonic displacement of the sea floor associated with shallow earthquakes, sea floor landslides, rock falls, and exploding volcanic islands. Mudslides and slumps are described as a shallower type of slope failure, usually affecting the upper soil mantle or weathered bedrock underlying natural slopes and triggered by surface or shallow subsurface saturation.

According to the City's Seismic Safety Element and the California Emergency Management Agency, the majority of the City is not located within a zone of seiche or mudflow hazard area. Similarly, the majority of the City is located outside of the Tsunami Inundation Zone, with the exception of the Port of Long Beach and in areas along the coastline and Los Angeles and San

Gabriel Rivers.[1] However, in the event of a tsunami, the City has established response procedures as described in the City of Long Beach Natural Hazards Mitigation Plan, Section 4.9, Tsunami Hazards.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed LUE does not include any physical improvements that would result in impacts related to inundation resulting from a seiche, tsunami, or mudflow. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts related to inundation resulting from a seiche, tsunami, or mudflow, and no mitigation would be required.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in impacts related to inundation resulting from a seiche, tsunami, or mudflow. This topic will not be analyzed further in the EIR.

[1] California Emergency Management Agency, Tsunami Map for Emergency Planning, Long Beach Quadrangle, March 1, 2009.

4.10 LAND USE/PLANNING

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☒	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion:

a) Physically divide an established community?

Less than Significant Impact.

Land Use Element. The proposed LUE would amend the existing General Plan Land Use Map to include the proposed PlaceTypes. The proposed PlaceTypes have been established in such a way as to guide future development to would allow for greater flexibility and cohesion in land use patterns throughout the City. In the North Long Beach Area, the updated LUE would establish the Open Space PlaceType along the Los Angeles River, would consolidate commercial activities into neighborhood-serving areas and would buffer industrial activities from existing neighborhoods by encouraging the conversion of some industrial uses to Neo Industrial activities and commercial uses. In addition, the proposed LUE would consolidate commercial activities along major arterials, encourage infill housing, convert industrial activities to commercial uses, and create recreation and green areas in the Bixby Knolls area. Similarly, the LUE would consolidate commercial activities along major arterials, create open space buffers between industrial activities and surrounding neighborhoods, create green and open space areas along the Los Angeles River, and would increase connectivity within the Westside and Wrigley areas. In the Eastside area, the proposed LUE would encourage multi-family housing in areas served by public transit, improve walkability, create recreation and open space areas, and improve pedestrian and bicycle facilities. As such, the proposed LUE would establish PlaceTypes throughout the City that would improve cohesion between existing communities and would encourage the provision of buffer zones between existing incompatible uses. Therefore, the proposed LUE would not result in the physical division of existing communities, but rather, would improve the connectivity between existing communities.

Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed LUE does not include any physical improvements that would result in the division of any established communities. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts related to the division of any established communities, and no mitigation would be required.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in the division of any established communities. This topic will not be analyzed further in the EIR.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Potentially Significant Impact. The proposed project involves the adoption of two elements for inclusion in the City's General Plan. The proposed LUE includes updates to the existing General Plan Land Use Element, with the most prominent update being the adoption of PlaceTypes in the place of traditional land use designations. The proposed UDE would be a new element of the City's General Plan and would include goals, policies, and strategies for guiding the visual character of the City, consistent with the intent of the PlaceTypes established in the proposed LUE. Although both the LUE and the UDE would include new goals, policies, and strategies, both proposed elements that would be generally consistent with the City's existing General Plan, approval of both the proposed LUE and UDE may result in potential conflicts with the City's existing goals, policies, and strategies of the City's existing General Plan. In addition, approval of the proposed project may also result in potential conflicts with the City's Zoning Code, and the Southern California Association of Governments (SCAG) Regional Comprehensive Plan (RCP), Therefore, impacts related to the proposed project's consistent with the City's General Plan, Zoning Code, SCAG's RCP, and any other applicable land use plans or policies will be analyzed further in the EIR.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. See Response 4.4.f, above. The proposed project would not result in an impact related to any applicable HCP or NCCP.

4.11 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Or

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

In 1975, the California Legislature enacted the Surface Mining and Reclamation Act (SMARA) which, among other things, provided guidelines for the classification and designation of mineral lands. Areas are classified on the basis of geologic factors without regard to existing land use and land ownership into four categories of Mineral Resource Zones (MRZs):

- **MRZ-1:** An area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** An area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3:** An area containing mineral deposits, the significance of which cannot be evaluated.
- **MRZ-4:** An area where available information is inadequate for assignment to any other MRZ zone.

Of the four categories, lands classified as MRZ-2 are of the greatest importance. Those areas are underlain by demonstrated mineral resources or are located where geologic data indicate that significant measured or indicated resources are present. MRZ-2 areas are designated by the Mining and Geology Board as being "regionally significant." Such designations require that a lead agency's land use decisions involving designated areas be made in accordance with its mineral resource management policies and that it consider the importance of the mineral resource to the region or the State as a whole, not just to the lead agency's jurisdiction.

No Impact. According to the City's General Plan Conservation Element (1973), the primary mineral resources within the City have historically been oil and natural gas. However, over the last century, oil and natural gas extractions have been diminished as the resources have become increasingly depleted. Although extraction operations continue, they are on a reduced scale as compared to past levels.

Land Use Element. Although the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed LUE does not include any physical improvements that

would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would not result in impacts related to the loss of availability of a known mineral resource that would be of value to the region and the residents of the State, and no mitigation would be required.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City that could result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. This topic will not be analyzed further in the EIR.

4.12 NOISE

Would the project result in:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

Applicable Noise Criteria

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with the adopted environmental plans and goals of the community in which it is located. The applicable noise standards governing the project site are the criteria in the City's Noise Element of the General Plan (1975) and the City's Noise Control Ordinance.

Noise Element of the General Plan. The Noise Element of the General Plan contains noise standards for mobile noise sources. These standards address the impacts of noise from adjacent roadways and airports. The City also specifies outdoor and indoor noise limits for residential uses, places of worship, educational facilities, hospitals, hotels/motels, and commercial and other land uses. The noise standard for exterior living areas is 65 A-weighted decibels (dBA) Community Noise Equivalent Level (CNEL). The indoor noise standard is 45 dBA CNEL, which is consistent with the standard in the California Noise Insulation Standard.

Municipal Code. The City has adopted a quantitative Noise Control Ordinance, No. C-5371, Long Beach 1978 (Municipal Code, Chapter 8.80). The ordinance establishes maximum permissible hourly noise levels (L_{50}) for different districts throughout the City.

The City's Noise Control Ordinance also governs the time of day that construction work can be conducted. The Noise Ordinance prohibits construction, drilling, repair, alteration, or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 7:00 p.m. on

Friday and 9:00 a.m. on Saturday, and after 6:00 p.m. on Saturday, or at any time on Sundays or federal holidays if the noise would create a disturbance across a residential or commercial property line or violate the quantitative provisions of the ordinance.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies?

Potentially Significant Impact.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in the exposure of persons or generation of noise levels in excess of the City's established noise standards. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in the exposure of persons or generation of noise levels in excess of the City's established noise standards, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact. See Response 4.12.a, above.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in the exposure of persons or generation of excessive groundborne vibration or groundborne noise levels. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in the exposure of persons or generation of excessive groundborne vibration or groundborne noise levels, and no mitigation would be required. This topic will not be analyzed further in the EIR.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. See Response 4.12.a, above.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density

development that could potentially result in an increase of ambient noise levels. This topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in the ambient noise levels in the project vicinity above levels existing without the project, and no mitigation would be required. This topic will not be analyzed further in the EIR.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. See Responses 4.12.a and 4.12.b, above.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less than Significant Impact.

Land Use Element. Approval of the proposed LUE would establish the Regional-Serving Facility PlaceType in multiple areas within the City, one of which would be the area currently developed in the vicinity of the Long Beach Airport. While the establishment of this PlaceType would allow for the continued operation of the Airport, this PlaceType designation would not allow for the development of sensitive uses (e.g., offices and residences) in the area surrounding the airport. Further, although approval of both the LUE and the UDE is considered a policy/planning action and does not include any physical improvements, future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would result in less than significant impacts related to the exposure of people or workers to excessive noise levels generated from the Long Beach Airport, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The UDE would guide the visual character of development proposed within the Regional-Serving Facility PlaceType near the Long Beach Airport area, but would not guide future growth or development in the area. As such, approval of the UDE would not result in the exposure of people or workers to excessive noise generated from the Long Beach Airport. This topic will not be analyzed further in the EIR.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips located in the City or in areas directly adjacent to the City. Therefore, no impacts are anticipated. This topic will not be analyzed further in the EIR.

4.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☒	☐	☐	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Discussion:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Potentially Significant Impact.

Land Use Element The proposed LUE includes the establishment of PlaceTypes that would allow for higher density mixed-use development along primary arterials and transit routes, near employment and activity centers. The addition of housing units as allowed under the proposed PlaceTypes could result in substantial population growth. Therefore, this topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not induce substantial population growth, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact.

Land Use Element The proposed LUE includes the establishment of PlaceTypes that would guide future development patterns throughout the City. The proposed LUE would assume that existing land uses would remain in place and future land use changes would occur through voluntary means or through infill efforts. Further, the LUE would allow for higher-density mixed-use residential/retail/office uses in areas that currently do not allow for residential uses, thereby increasing the availability of a range of housing types throughout the City. Therefore, approval of the proposed LUE would result in less than significant impacts related to the displacement of substantial numbers of existing housing or people elsewhere.

Approval of the LUE is considered a policy/planning action and does not include any physical improvements. As such, future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would result in less than significant impacts related to the displacement of existing housing or people elsewhere, and not mitigation would be required. This topic will not be analyzed further in the EIR. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE would be consistent with the proposed LUE and all other elements of the City's General Plan. The UDE would establish goals, policies, and strategies aimed at guiding the visual character of future development in the City, but would not encourage growth that could potentially displace substantial numbers of existing housing or people elsewhere. This topic will not be analyzed further in the EIR.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact. Refer to Response 4.13.b, above.

4.14 PUBLIC SERVICES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire Protection?	☒	☐	☐	☐
ii) Police Protection?	☒	☐	☐	☐
iii) Schools?	☒	☐	☐	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☒	☐	☐	☐

Discussion:

a) Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Fire Protection?

Potentially Significant Impact. The Long Beach Fire Department (LBFD) provides fire protection, emergency medical and rescue services, hazardous inspection and response, and public education activities to the City. The LBFD consists of 24 stations located throughout the City. [1] The proposed project would not impact the number of existing fire stations in the City, and fire stations would continue to be identified as land uses within the Residential PlaceType neighborhoods. Further, the proposed LUE would concentrate development near transit stops (i.e., Blue Line) to encourage alternative modes of transportation and reduce automobile congestion. As such, the proposed LUE is anticipated to improve emergency response times and better prepare the LBFD for emergency response to hazards and disasters.

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts related to fire protection. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to fire protection services, and no mitigation would be required. This topic will not be analyzed further in the EIR.

[1] City of Long Beach Fire Department, Station Locations. Website: http://www.longbeach.gov/fire/fire_station_locations.asp (accessed February 6, 2015).

a) Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

ii) Police Protection?

Potentially Significant Impact. The City of Long Beach Police Department (LBPD) is responsible for providing law enforcement protection throughout the City. According to the City's website, the LBPD currently employs approximately 792 officers. The proposed project would not impact the number of police officers in the City, and police stations would continue to be identified as land uses within the Residential PlaceType neighborhoods. Further, the proposed LUE would concentrate development near transit stops (i.e., Blue Line) to encourage alternative modes of transportation and reduce automobile congestion. As such, the proposed LUE is anticipated to improve emergency response times and better prepare the LBPD for emergency response to hazards and disasters.

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts related to police protection. Therefore, this topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to police protection services, and no mitigation would be required. This topic will not be analyzed further in the EIR.

a) Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

iii) Schools?

Potentially Significant Impact.

Land Use Element. The City is served by the Long Beach Unified School District (LBUSD). Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts related to schools. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the

updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to schools, and no mitigation would be required. This topic will not be analyzed further in the EIR.

a) Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

iv) Parks?

Less Than Significant Impact.

Land Use Element. As described further below, according to the proposed LUE, the City currently contains approximately 2,750 ac of recreational uses, or the equivalent of approximately 5.9 acres of recreational open space per 1,000 residents.[1] As stated in the project description, approval of the proposed LUE would include the establishment of the Open Space PlaceType, which allows for the continued operation of existing parks in the City. Specifically, the Open Space PlaceType would provide for the preservation of existing recreational and passive undeveloped land and water areas, including parks, beaches, golf courses, marinas, flood control channels and basins, rivers, utility rights-of-way, oil islands, inland bodies of water, nature reserves, parks, and wetlands. Further, future individual projects resulting from the approval of the proposed LUE would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed LUE would result in less than significant impacts related to park facilities, and no mitigation would be required.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to parks, and no mitigation would be required. This topic will not be analyzed further in the EIR.

a) Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

v) Other public facilities?

Potentially Significant Impact.

[1] According to the United States Census Bureau, there are 469,428 residents in the City of Long Beach. Therefore, 2,750 acres x 1,000 acres/469,428x = 2,750,000/469,428x = 5.86 acres (approximately 5.9 acres).

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts to other public facilities (e.g., libraries). Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to other public facilities, and no mitigation would be required. This topic will not be analyzed further in the EIR.

4.15 RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact. According to the proposed LUE, the City currently contains 100 public parks with 25 community centers, 2 tennis centers, 5 municipal golf courses, and a marina system. Overall, the citywide total of recreation uses is approximately 2,750 acres. The proposed LUE would establish the Open Space PlaceType that would aim to preserve these existing parks and recreational facilities, while also creating additional parks and urban open spaces to increase connectivity between these resources and surrounding neighborhoods. For example, the LUE and UDE contain policies aimed at providing a more equitable distribution of open space throughout the City, as well as policies encouraging innovative development patterns that provide for smaller parks in more urbanized areas of the City.

Approval of the both the LUE and UDE is considered a policy/planning action, and it would not include physical improvements that would generate an increased use of existing neighborhood and regional parks or other recreational facilities. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed project would result in less than significant impacts related to increased use and deterioration of recreational facilities, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less than Significant Impact. Refer to Responses 4.14.a.iii and 4.15.a., above.

4.16 TRANSPORTATION/TRAFFIC

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒	☐

Discussion:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Potentially Significant Impact.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in an increase in traffic volumes that could conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City. Therefore, because the proposed UDE would not introduce traffic volumes within the City, approval of the proposed UDE is not anticipated to conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, and no mitigation would be required. This topic will not be analyzed further in the EIR.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Potentially Significant Impact. The County Metropolitan Transportation Authority adopted the Congestion Management Program (CMP) in 2010. This CMP establishes a minimum standard of level of service (LOS) E for signalized roadway intersections in the County of Los Angeles.

Land Use Element. Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially result in an increase in traffic volumes that could conflict with 2010 CMP. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City. Therefore, because the proposed UDE would not introduce traffic volumes within the City, approval of the proposed UDE is not anticipated to conflict with the 2010 CMP, and no mitigation would be required. This topic will not be analyzed further in the EIR.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Less than Significant Impact.

Land Use Element. Although approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, future development occurring as a result of approval of the LUE would not interfere with air traffic patterns, conflict with established FAA flight protection zones, or conflict with building height standards established by the FAA for structures on and adjacent to the Long Beach Airport. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed LUE would result in less than significant impacts related to changes in air traffic patterns, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City. Therefore, because the proposed UDE would not result in changes to air traffic patterns that could result in substantial safety risks, and no mitigation would be required. This topic will not be analyzed further in the EIR.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact.

Land Use Element. Although approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, future development occurring as a result of approval of the LUE would not include the physical development of any project that would substantially increase hazards due to a design feature or incompatible uses. Further, the proposed LUE would establish PlaceTypes, each with its own land use compatibility strategies, to ease transitions between new development and established developments within the City. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*. Therefore, the proposed LUE would result in less than significant impacts related to hazards due to a design feature or incompatible uses, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. However, approval of the UDE itself would not result in any physical improvements or changes to existing and proposed development patterns in the City. Therefore, because the proposed UDE would not result in impacts related to hazards due to a design feature or incompatible uses, and no mitigation would be required. This topic will not be analyzed further in the EIR.

e) Result in inadequate emergency access?

Less Than Significant Impact. While approval of the proposed project would guide future development in the City, neither the LUE nor the UDE would propose or encourage development with inadequate emergency access. Future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines*, and individual site plans would be subject to review and approval by the LBFD and LBPD to ensure that adequate emergency access would be provided. Therefore, impacts are considered less than significant, and no mitigation would be required. This topic will not be analyzed further in the EIR.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Less Than Significant Impact. While approval of the proposed project would guide future development in the City, neither the LUE nor the UDE would propose or encourage development that would conflict with adopted policies supporting alternative transportation. Further, the LUE and UDE would encourage development in the City along primary arterials and major transit routes in an effort to minimize vehicle miles traveled (VMTs) and encourage alternative modes of transportation. For example, the LUE would develop housing and employment options around transit stations (particularly along Long Beach Boulevard along the Blue Line) to increase transit use in the City and reduce automobile dependence. Therefore, approval of the proposed project

would result in less than significant impacts related to conflict with any adopted policies, plans, or programs supporting the use of alternative transportation. No mitigation would be required. This topic will not be analyzed further in the EIR.

4.17 UTILITIES/SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☒	☐	☐	☐
b) Require or result in the construction of new water or wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☒	☐	☐	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☒	☐	☐	☐
f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?	☒	☐	☐	☐
g) Comply with federal, state, and local statutes and regulations related to solid wastes.	☐	☐	☒	☐

Discussion:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Potentially Significant Impact. Wastewater generated in the City is currently delivered to the Joint Water Pollution Control Plant (JWPCP) of the Sanitation Districts of Los Angeles County (LACSD).[1] LACSD facilities are required to meet all wastewater treatment requirements from the Los Angeles Regional Water Quality Control Board (RWQCB).

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in an increased demand for wastewater treatment services that could result in the exceedance of wastewater treatment requirements established by the Los Angeles RWQCB. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to the exceedance of any wastewater treatment requirements, and no mitigation would be required. This topic will not be analyzed further in the EIR.

[1] LBWD. Website: http://www.lbwater.org/sewage-treatment (accessed November 21, 2014).

b) Require or result in the construction of new water or wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Potentially Significant Impact. The City's main sources of water supply are groundwater and imported water. The City is able to meet approximately half of its water supply needs due to the fact that the City has ownership rights to groundwater wells located throughout the City. In addition, the City is able to purchase treated surface water from the Metropolitan Water District of Southern California; this water originates from the Colorado River Aqueduct and the Northern California Bay-Delta region.[1] The Long Beach Water Reclamation Plant (WRP) also reuses reclaimed water in the City for irrigation of parks, schools, golf courses, cemeteries, greenbelts, and commercial nurseries. This plant currently has a capacity of 25 million gallons per day (mgd).[2]

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts related to increased demands for water and wastewater. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to water or wastewater treatment services or collection systems, and no mitigation would be required. This topic will not be analyzed further in the EIR.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Potentially Significant Impact.

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts related to storm water drainage facilities. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to stormwater

[1] LBWD. Website: http://www.lbwater.org/sources-water (accessed November 21, 2014).
[2] Sanitation Districts of Los Angeles County, Clear Water Program. Website: http://www.clearwater program.org/clearwater/wastewaterplants.asp#longbeach (accessed November 21, 2014).

drainage facilities, and no mitigation would be required. This topic will not be analyzed further in the EIR.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Potentially Significant Impact.

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts related to water supplies. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to existing or projected water supplies, and no mitigation would be required. This topic will not be analyzed further in the EIR.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Potentially Significant Impact. The City's Water Department operates wastewater lines and delivers this wastewater to the LACSD facilities located on the northern and southern sides of the City. The majority of the City's wastewater is delivered to the Joint Water Pollution Control Plant (JWPCP), and the remaining portion is delivered to the Long Beach WRP. The JWPCP currently treats up to 350 mgd, and the Long Beach WRP treats up to 25 mgd.[1]

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in potential impacts related to wastewater treatment services. Therefore, this topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to wastewater treatment services, and no mitigation would be required. This topic will not be analyzed further in the EIR.

[1] LBWD. Sewage Treatment. Website: http://www.lbwater.org/sewage-treatment (accessed April 20, 2015).

f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

Potentially Significant Impact.

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in the increased generation of solid waste that could result in the exceedance of a permitted capacity of landfills currently serving the City. Therefore, this topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to the capacity of existing landfills serving the City, and no mitigation would be required. This topic will not be analyzed further in the EIR.

g) Comply with federal, state, and local statutes and regulations related to solid wastes?

Less Than Significant Impact. The California Integrated Waste Management Act (AB 939) changed the focus of solid waste management from landfill to diversion strategies such as resource reduction, recycling, and composting. The intent of these diversions strategies is to reduce dependence on landfills for solid waste disposal. AB 939 established mandatory diversion goals of 25 percent by 1995 and 50 percent by 2000. As of 2010, the City had accomplished a waste diversion rate of 72 percent. The City provides curbside recycling and collection of green waste for all residences within the City; both of these collection services count toward the City's diversion rate. In addition, the City has adopted an ordinance that requires certain demolition and/or construction projects to divert at least 60 percent of waste either through recycling, salvage, or deconstruction. The Construction & Demolition Debris Recycling (C&D) Program, which took effect on November 5, 2007, aims to encourage permit applicants to recycle all C&D materials through a refundable performance deposit. The C&D program also encourages the use of green building techniques in new construction and promotes reuse or salvaging of recyclable materials in demolition, deconstruction, and construction projects.

Land Use Element Approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development that could potentially induce population growth, thereby potentially resulting in an increased generation of solid waste. Further, future individual projects resulting from the approval of the proposed project would be subject to separate environmental review on a project-specific basis, in accordance with the provisions of CEQA and the *State CEQA Guidelines* and would be required to comply with existing and future statutes and regulations mandated by the City, State, or federal law. Therefore, it is anticipated that impacts related to federal, State, and local statutes regulating solid waste would be less than significant, and no mitigation would be required. This topic will not be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to conflicts with regulations related to solid waste, and no mitigation would be required. This topic will not be analyzed further in the EIR.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)	☒	☐	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Discussion:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact. As described above in Sections 4.4, Biological Resources, and Section 4.5, Cultural Resources, approval of the proposed project is considered a policy/planning action and does not propose any physical improvements that would result in potential impacts to biological or cultural resources. Further, approval of the proposed project would not result in the degradation of the quality of the environment or natural habitats, nor would the project result in impacts to fish and wildlife species or endangered plant or animal species. In addition, approval of the proposed project would not result in the elimination of important examples of major periods of California history or prehistory.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)

Potentially Significant Impact.

Land Use Element The proposed LUE includes the establishment of PlaceTypes that would allow for higher density mixed-use development within areas in the City concentrated along primary arterials and transit routes, near employment and activity centers. The addition of population associated with the proposed increase in housing units as allowed under the proposed LUE could result in potentially cumulatively considerable impacts related to air quality, global climate change, noise, and transportation/traffic. This topic will be analyzed further in the EIR.

Urban Design Element. The UDE would establish goals, policies, and strategies aimed at guiding the visual character of future development in the City, but would not encourage

population growth. Therefore, the proposed UDE would not result in cumulatively considerable impacts, and no mitigation would be required. This topic will not be analyzed further in the EIR.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant Impact.

Land Use Element The proposed LUE includes the establishment of PlaceTypes that would allow for higher density mixed-use development within areas in the City concentrated along primary arterials and transit routes, near employment and activity centers. The addition of population associated with the proposed increase in housing units as allowed under the proposed LUE could result in potentially significant impacts with respect to aesthetics, air quality, global climate change, noise, population/housing, public services, transportation/traffic, and utilities and service systems. This topic will be analyzed further in the EIR.

Urban Design Element. The proposed UDE contains specific goals, policies, and strategies guiding the visual quality and aesthetic character of new development proposed as part of the updated LUE. Therefore, because the proposed UDE would not introduce any development within the City, approval of the proposed UDE would not result in impacts to the environment or human beings, and no mitigation would be required. This topic will not be analyzed further in the EIR.

5.0 REFERENCES

CAL FIRE, Communities at Risk List. Website: http://osfm.fire.ca.gov/fireplan/fireplanning_communities_at_risk.php?filter_field=place_name&filter_text=long+beach+ (accessed April 20, 2015).

California Air Resources Board, 2013. iADAM Air Quality Data Statistics, www.arb.ca.gov/adam/, (accessed November 14, 2014).

California Air Resources Board. Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Thresholds for Greenhouse Gases Under the California Environmental Quality Act, October 24, 2008.

California Department of Transportation, Scenic Highways. Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm (accessed February 5, 2015).

California Emergency Management Agency, Tsunami Map for Emergency Planning, Long Beach Quadrangle, March 1, 2009.

City of Long Beach Fire Department, Fire Department. Website: http://www.longbeach.gov/fire/, (accessed November 21, 2014).

———. Station Locations. Website: http://www.longbeach.gov/fire/fire_station_locations.asp (accessed February 6, 2015).

City of Long Beach Police Department, South Division. Website: http://www.longbeach.gov/police/ (accessed November 21, 2014).

———. Sources of Water. Website: http://www.lbwater.org/sources-water (accessed November 21, 2014).

City of Long Beach, General Plan, Air Quality Element, 1996

———. General Plan, Conservation Element, 1973.

———. General Plan, Draft Land Use Element, 2015.

———. General Plan, Draft Urban Design Element, 2015.

———. General Plan, Historic Preservation Element, 2010.

———. General Plan, Land Use Element, 1989.

———. General Plan, Mobility Element, 2014.

———. General Plan, Noise Element, 1975.

———. General Plan, Public Safety Element, 1975.

———. General Plan, Seismic Safety Element, 1988.

———. General Plan, Scenic Routes Element, 1975.

Healthy Communities Policy. Website: http://www.bhclongbeach.org/wp-content/uploads/2012/06/Healthy-Communities-Policy-Staff-report.pdf, October 2014.

———.Municipal Code. Website: https://www.municode.com/library/ca/long_beach/codes/municipal_code?nodeId=16115, as adopted on November 18, 2014.

———. City of Long Beach Natural Hazards Mitigation Plan, October 19, 2004.

Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007: Working Group I: The Physical Science Basis. Website: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html (accessed November 21, 2014).

Los Angeles County Metropolitan Transportation Authority, 2010 Congestion Management Plan.

Long Beach Water Department, Sewage Treatment. Website: http://www.lbwater.org/sewage-treatment (accessed April 20, 2015).

Sanitation Districts of Los Angeles County, Clear Water Program. Website: http://www.clearwaterprogram.org/clearwater/wastewaterplants.asp#longbeach (accessed November 21, 2014).

———.2010 Urban Water Management Plan, last revised on September 15, 2011.

South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.

State of California, Governor's Office of Planning and Research. CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review. June 19, 2008.

Tang, Diana. "Re: Questions for Long Beach SED input." Message to Steve Gerhardt.

United States Census Bureau, State and County QuickFacts, Long Beach.

United States Environmental Protection Agency. National Ambient Air Quality Standards. Website: www.epa.gov/air/criteria.html (accessed November 14, 2014).

This page intentionally left blank

COMMENT LETTERS

This page intentionally left blank

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

Notice of Preparation

May 18, 2015

To: Reviewing Agencies

Re: General Plan Land Use and Urban Design Elements
SCH# 2015051054

Attached for your review and comment is the Notice of Preparation (NOP) for the General Plan Land Use and Urban Design Elements draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Craig Chalfant
City of Long Beach
333 W. Ocean Boulevard, 5th Floor
Long Beach, CA 90802

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

City of Long Beach
RECEIVED
MAY 27 2015
Planning Bureau

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2015051054
Project Title General Plan Land Use and Urban Design Elements
Lead Agency Long Beach, City of

Type NOP Notice of Preparation

Description The project proposes to update the City's General Plan Land Use Element (LUE) and to adopt a new General Plan Urban Design Element (UDE). The proposed LUE would replace the current 1989 General Plan LUE. Compared to the existing LUE, the proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach of segregating property within the City through traditional land uses designations and zoning classifications. The UDE would be an entirely new element of the City's General Plan. The UDE aims to improve the City's PlaceTypes by creating great places, improving the urban fabric, public spaces, and defining edges, thoroughfares, and corridors.

Lead Agency Contact

Name Craig Chalfant
Agency City of Long Beach
Phone 562 570 6368 **Fax**
email
Address 333 W. Ocean Boulevard, 5th Floor
City Long Beach **State** CA **Zip** 90802

Project Location

County Los Angeles
City Long Beach
Region
Cross Streets The project includes all areas within the City limits
Lat / Long
Parcel No. All areas within City limits
Township **Range** **Section** **Base**

Proximity to:

Highways SR-91, 103, 47, 1
Airports Long Beach Airport
Railways Metro
Waterways Pacific Ocean, POLB, LA River, Alamitos Bay
Schools Multiple
Land Use All areas within City limits and their current land use designations and zoning districts, as outlined in the GP and Zoning Code

---

Project Issues Aesthetic/Visual; Air Quality; Coastal Zone; Noise; Population/Housing Balance; Public Services; Schools/Universities; Sewer Capacity; Solid Waste; Traffic/Circulation; Water Supply; Growth Inducing; Landuse; Cumulative Effects; Other Issues

---

Reviewing Agencies Resources Agency; California Coastal Commission; Cal Fire; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 5; Office of Emergency Services, California; Native American Heritage Commission; State Lands Commission; Caltrans, Division of Aeronautics; Caltrans, Division of Transportation Planning; Caltrans, District 7; Air Resources Board; Regional Water Quality Control Board, Region 4

Date Received 05/18/2015 **Start of Review** 05/18/2015 **End of Review** 06/16/2015

Note: Blanks in data fields result from insufficient information provided by lead agency.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH# 2015051054

Project Title: General Plan Land Use and Urban Design Elements

Lead Agency: City of Long Beach
Contact Person: Craig Chalfant
Mailing Address: 333 West Ocean Boulevard, 5th Floor
Phone: (562) 570-6368
City: Long Beach
Zip: 90802
County: Los Angeles

Project Location: County: Los Angeles
City/Nearest Community: Long Beach
Cross Streets: The project includes all areas within the City limits
Zip Code: 90802
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W
Total Acres: 52 square miles
Assessor's Parcel No.: all areas within City limits
Section: ____ Twp.: ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: S-91,-103,-47,-1
Waterways: Pacific Ocean, POLB, LA River, Alamitos Bay
Airports: Long Beach Airport
Railways: Metro
Schools: Multiple

Document Type:

CEQA:
- [x] NOP
- [ ] Early Cons
- [ ] Neg Dec
- [ ] Mit Neg Dec
- [ ] Draft EIR
- [ ] Supplement/Subsequent EIR (Prior SCH No.) ____
- Other: ____

NEPA:
- [ ] NOI
- [ ] EA
- [ ] Draft EIS
- [ ] FONSI

Other:
- [ ] Joint Document
- [ ] Final Document
- [ ] Other: ____

RECEIVED MAY 18 2015 STATE CLEARINGHOUSE

Local Action Type:

- [ ] General Plan Update
- [x] General Plan Amendment
- [x] General Plan Element
- [ ] Community Plan
- [ ] Specific Plan
- [ ] Master Plan
- [ ] Planned Unit Development
- [ ] Site Plan
- [ ] Rezone
- [ ] Prezone
- [ ] Use Permit
- [ ] Land Division (Subdivision, etc.)
- [ ] Annexation
- [ ] Redevelopment
- [ ] Coastal Permit
- [ ] Other: ____

Development Type:

- [ ] Residential: Units ____ Acres ____
- [ ] Office: Sq.ft. ____ Acres ____ Employees ____
- [ ] Commercial: Sq.ft. ____ Acres ____ Employees ____
- [ ] Industrial: Sq.ft. ____ Acres ____ Employees ____
- [ ] Educational: ____
- [ ] Recreational: ____
- [ ] Water Facilities: Type ____ MGD ____
- [ ] Transportation: Type ____
- [ ] Mining: Mineral ____
- [ ] Power: Type ____ MW ____
- [ ] Waste Treatment: Type ____ MGD ____
- [ ] Hazardous Waste: Type ____
- [ ] Other: No development-approval of General Plan Elements

Project Issues Discussed in Document:

- [x] Aesthetic/Visual
- [ ] Agricultural Land
- [x] Air Quality
- [ ] Archeological/Historical
- [ ] Biological Resources
- [x] Coastal Zone
- [ ] Drainage/Absorption
- [ ] Economic/Jobs
- [ ] Fiscal
- [ ] Flood Plain/Flooding
- [ ] Forest Land/Fire Hazard
- [ ] Geologic/Seismic
- [ ] Minerals
- [x] Noise
- [x] Population/Housing Balance
- [x] Public Services/Facilities
- [ ] Recreation/Parks
- [x] Schools/Universities
- [ ] Septic Systems
- [x] Sewer Capacity
- [ ] Soil Erosion/Compaction/Grading
- [x] Solid Waste
- [ ] Toxic/Hazardous
- [x] Traffic/Circulation
- [ ] Vegetation
- [ ] Water Quality
- [x] Water Supply/Groundwater
- [ ] Wetland/Riparian
- [x] Growth Inducement
- [x] Land Use
- [x] Cumulative Effects
- [x] Other: GHG

Present Land Use/Zoning/General Plan Designation:

All areas within City limits and their current land use designations and zoning districts, as outlined in the GP and Zoning Code

Project Description: *(please use a separate page if necessary)*

The project proposes to update the City's General Plan Land Use Element (LUE) and to adopt a new General Plan Urban Design Element (UDE). The proposed LUE would replace the current 1989 General Plan LUE. Compared to the existing LUE, the proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach of segregating property within the City through traditional land uses designations and zoning classifications. The UDE would be an entirely new element of the City's General Plan. The UDE aims to improve the City's PlaceTypes by creating great places, improving the urban fabric, public spaces, and defining edges, thoroughfares, and corridors.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

NOP Distribution List: SCH#

County: Los Angeles

SCH# 2015051054

Resources Agency

- ■ **Resources Agency**
  Nadell Gayou
- ☐ **Dept. of Boating & Waterways**
  Nicole Wong
- ■ **California Coastal Commission**
  Elizabeth A. Fuchs
- ☐ **Colorado River Board**
  Lisa Johansen
- ☐ **Dept. of Conservation**
  Elizabeth Carpenter
- ☐ **California Energy Commission**
  Eric Knight
- ■ **Cal Fire**
  Dan Foster
- ☐ **Central Valley Flood Protection Board**
  James Herota
- ☐ **Office of Historic Preservation**
  Ron Parsons
- ■ **Dept of Parks & Recreation**
  Environmental Stewardship Section
- ☐ **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- ☐ **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- ■ **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

Fish and Game

- ☐ **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- ☐ **Fish & Wildlife Region 1**
  Donald Koch
- ☐ **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- ☐ **Fish & Wildlife Region 2**
  Jeff Drongesen
- ☐ **Fish & Wildlife Region 3**
  Charles Armor
- ☐ **Fish & Wildlife Region 4**
  Julie Vance
- ■ **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- ☐ **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- ☐ **Fish & Wildlife Region 6 I/M**
  Heidi Sickler
  Inyo/Mono, Habitat Conservation Program
- ☐ **Dept. of Fish & Wildlife M**
  George Isaac
  Marine Region

Other Departments

- ☐ **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- ☐ **Depart. of General Services**
  Public School Construction
- ☐ **Dept. of General Services**
  Anna Garbeff
  Environmental Services Section
- ☐ **Delta Stewardship Council**
  Kevan Samsam
- ☐ **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- ☐ **Delta Protection Commission**
  Michael Machado
- ■ **OES (Office of Emergency Services)**
  Dennis Castrillo
- ■ **Native American Heritage Comm.**
  Debbie Treadway
- ☐ **Public Utilities Commission**
  Leo Wong
- ☐ **Santa Monica Bay Restoration**
  Guangyu Wang
- ■ **State Lands Commission**
  Jennifer Deleong
- ☐ **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- ■ **Caltrans - Division of Aeronautics**
  Philip Crimmins
- ■ **Caltrans – Planning HQ LD-IGR**
  Terri Pencovic
- ☐ **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- ☐ **Caltrans, District 1**
  Rex Jackman
- ☐ **Caltrans, District 2**
  Marcelino Gonzalez
- ☐ **Caltrans, District 3**
  Eric Federicks – South
  Susan Zanchi - North
- ☐ **Caltrans, District 4**
  Erik Alm
- ☐ **Caltrans, District 5**
  Larry Newland
- ☐ **Caltrans, District 6**
  Michael Navarro
- ■ **Caltrans, District 7**
  Dianna Watson
- ☐ **Caltrans, District 8**
  Mark Roberts
- ☐ **Caltrans, District 9**
  Gayle Rosander
- ☐ **Caltrans, District 10**
  Tom Dumas
- ☐ **Caltrans, District 11**
  Jacob Armstrong
- ☐ **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- ■ All Other Projects
  Cathi Slaminski
  - ☐ Transportation Projects
    Nesamani Kalandiyur
  - ☐ Industrial/Energy Projects
    Mike Tollstrup
- ☐ **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- ☐ **State Water Resources Control Board**
  Jeffery Werth
  Division of Drinking Water
- ☐ **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- ☐ **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- ☐ **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- ☐ **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- ☐ **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- ☐ **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- ☐ **RWQCB 3**
  Central Coast Region (3)
- ■ **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- ☐ **RWQCB 5S**
  Central Valley Region (5)
  - ☐ **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - ☐ **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- ☐ **RWQCB 6**
  Lahontan Region (6)
  - ☐ **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- ☐ **RWQCB 7**
  Colorado River Basin Region (7)
- ☐ **RWQCB 8**
  Santa Ana Region (8)
- ☐ **RWQCB 9**
  San Diego Region (9)

☐ **Other** _____

_____

_____

☐ _____
Conservancy

Last Updated 10/13/2014

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

City of Long Beach
RECEIVED
MAY 27 2015
Planning Bureau

May 21, 2015

Craig Calfant, Planner
City of Long Beach
333 West Ocean Boulevard, Fifth Floor
Long Beach, CA 90802

Notice of Preparation of a CEQA Document for the
General Plan Urban Design Element Project

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The SCAQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the CEQA document upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. More recent guidance developed since this Handbook was published is also available on SCAQMD's website here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). SCAQMD staff also recommends that the lead agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD staff requests that the lead agency quantify criteria pollutant emissions and compare the results to the recommended regional significance thresholds found here: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. In addition to analyzing regional air quality impacts, the SCAQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts

when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

In addition, guidance on siting incompatible land uses (such as placing homes near freeways) can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Perspective*, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate these impacts. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying possible mitigation measures for the project, including:

- Chapter 11 of the SCAQMD *CEQA Air Quality Handbook*
- SCAQMD's CEQA web pages at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies.
- CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* available here: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.
- SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions
- Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf?sfvrsn=4.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's webpage (http://www.aqmd.gov).

The SCAQMD staff is available to work with the Lead Agency to ensure that project emissions are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at Jwong1@aqmd.gov or call me at (909) 396-3176.

Sincerely,

Jillian Wong

Jillian Wong, Ph.D.
Program Supervisor
Planning, Rule Development & Area Sources

LAC150519-04
Control Number

Alyssa Helper

From: Craig Chalfant <Craig.Chalfant@longbeach.gov>
Sent: Thursday, May 28, 2015 8:46 AM
To: Ashley Davis; Alyssa Helper
Cc: Angela Reynolds; Christopher Koontz
Subject: FW: Downtown urban design and land use

-----Original Message-----
From: Anne Proffit [mailto:anne.proffit@gmail.com]
Sent: Wednesday, May 27, 2015 5:35 PM
To: Craig Chalfant
Subject: Downtown urban design and land use

I think it's horrible that you intend to paper downtown with condos even as you implement this discount mall south of Pine... while I have no objections to added parking problems and terrible road congestion, I do have a particular difficulty with WATER.

Where does the city of LB intend to find WATER to satisfy all of these people? Do you simply intend to make those stakeholders who have already invested in downtown do with less?

It seems to be the usual and customary process.

Doesn't matter anyway - you have no interest in what the currently taxable stakeholders think, do you?

June 4, 2015

Discussion points for Planning Commission Study Session - General Plan Land Use Element and the proposed addition of a General Plan Urban Design Element.

Subject: Flexibility in zoning requirements to allow legal conversions of exiting accessory structures to secondary dwelling units on single-family zoned properties. Additionally, allow secondary structures without requiring an additional enclosed parking space if adequate space is available on-site.

I am not a homeowner but I may be one day. I currently rent in LB and have recently researched permitting secondary unit conversions as I am curious about finding a home that would serve my immediate family as well as my father-in-law who is approaching retirement. I wonder, what is the reality of finding an affordable multigenerational property in a residential neighborhood in Long Beach?

I am not alone.

Realtors, builders, buyers, planners and social scientists all recognize the demand for multigenerational homes. – a quick Google search will confirm this.

Homeowner desires:

- Increase home value and reduce monthly costs of living for themselves and extended family.
- Multigenerational housing demand is rising
    - While privacy remains a top priority. A secondary unit allows more than one generation to live together while still maintaining individual independence and privacy.

City of Long Beach planning visions:

- Increased affordable housing for all economic classes.
- The realization that the baby boomer population is ever-increasing
- Addressing affordable housing needs should not be limited to TOD's.
- The adoption of the mobility element to our General Plan promotes less cars more bikes and transit.

I believe there is a disconnect between what homeowners want, the city's planning vision and the current Development Services zoning policies on this subject.

I suggest that when adopting the new Land Use and Urban Design Elements of the General Plan that zoning regarding accessory unit conversions be reevaluated. Allowing planners to look at specific neighborhoods and properties on a case by case basis. When a single-family home has adequate on-site parking and a secondary unit presents no adverse impact to the community there should be flexibility in the code. Conversions rather than additions dramatically reduces the cost of a secondary unit while maintaining open space and the amount of permeable surface on the property. Allowing habitable accessory space above a garage should also be examined as an alternative.

The first step to align these common visions in the City of Long Beach would be to relax zoning requirements or allow for zoning variances in non-parking impacted areas. The City should provide solutions to law abiding citizens to legally and affordably provide homes for their loved one. Our City's current endeavor to reimagine and reshape our City's future through the goals and polices set forth in the General Plan make this the most opportune time to re-examine our existing regulations and policies and test whether or not they still represent and serve of citizen's needs today and in the future.

Thank you,
Marilyn Surakus
3435 E 3rd St
Long Beach CA, 90814

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

City of Long Beach
RECEIVED
JUN 16 2015
TM
Planning Bureau

June 10, 2015

Craig Clalfant
City of Long Beach
Planning and Research
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Dear Mr. Clalfant:

NOTICE OF PREPARATION, "GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS", PROPOSES TO UPDATE THE CITY'S GENERAL PLAN LAND USE ELEMENT AND TO ADOPT A NEW GENERAL PLAN URBAN DESIGN ELEMENT, LONG BEACH (FFER 201500106)

The Notice of Preparation has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION:

1. The subject property is entirely within the City of Long Beach, which is not a part of the emergency response area of the Los Angeles County Fire Department (also known as the Consolidated Fire Protection District of Los Angeles County). Therefore, this project does not appear to have any impact on the emergency responsibilities of this Department.

LAND DEVELOPMENT UNIT:

1. This project is located entirely in the City of Long Beach. Therefore, the City of Long Beach Fire Department has jurisdiction concerning this project and will be setting conditions. This project is located in close proximity to the jurisdictional

area of the Los Angeles County Fire Department. However, this project is unlikely to have an impact that necessitates a comment concerning general requirements from the Land Development Unit of the Los Angeles County Fire Department.

2. Should any questions arise regarding subdivision, water systems, or access, please contact the County of Los Angeles Fire Department's Land Development Unit's Inspector Nancy Rodeheffer at (323) 890-4243.

3. The County of Los Angeles Fire Department's Land Development Unit appreciates the opportunity to comment on this project.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

1. The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed in the Draft Environmental Impact Report.

HEALTH HAZARDOUS MATERIALS DIVISION:

1. The Health Hazardous Materials Division (HHMD) of the Los Angeles County Fire Department has no comment or objection to the project at this time.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

KEVIN T JOHNSON, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

KTJ:ad

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, OFFICE OF REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Serious drought
Help save water!

June 15, 2015

Mr. Craig Chalfant
City of Long Beach
Department of Development Services
333 W. Ocean Boulevard
Long Beach, CA, 90802

Re: **City of Long Beach General Plan Land Use & Urban Design Elements Project**
Notice of Preparation, NOP
IGR#150536RH

Dear Mr. Chalfant:

We have reviewed the Notice of Preparation report prepared for the City's General Plan Land Use and Urban Design Elements Project. Primary goals of the Land Use Element (LUE) include (1) Creating an efficient, high quality, balanced, and multimodal mobility network, (2) Encourage innovative land use practices (3) maintain the small-town feel of existing neighborhoods and the urban land use pattern in downtown Long Beach and in major centers.

The Urban Design Element (UDE) would be an entirely new element of the City's General Plan. It aims to improve the urban fabric, public spaces, define edges, thoroughfares and corridors. By improving the urban fabric, the City would allow for new development that would complement the existing historical development.

The implementation of the goals listed above would accommodate new business opportunities, expand job growth, revitalize corridors, enhance existing neighborhoods, create a smarter city, protect the environment and encourage sustainable planning practices and development.

In the interest of mutual cooperation throughout the environmental review process, please consider the following comments:

- As the state transportation agency, with jurisdiction over state highways, we support and share the City's goals to provide a balanced, multi-modal transportation network. Caltrans is particularly interested in the transportation planning roles of local general plans and suggests that the following areas be emphasized: Coordination of planning efforts between local agencies and Caltrans, preservation of transportation corridors for future system improvements, and development of coordinated transportation system management plans that achieve the maximum use of present and proposed infrastructure.

- Caltrans agrees that the approval of the proposed LUE would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density. Approval of high-density development projects could potentially result in an increase in traffic volumes that could

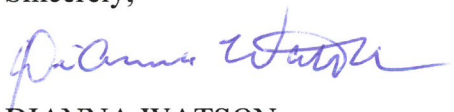
conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Therefore, this topic should be analyzed further in the EIR.

- Caltrans requests to be consulted on any land development projects that may require a traffic impact analysis, are in close proximity to State facilities, and/or may potentially impact the State Highway System. Please include policies that require collaboration with Caltrans in the planning and implementation of transportation improvements that may affect state highways. Caltrans may provide assistance in the areas of traffic modeling, mainline freeway and freeway ramp analysis, data collection, environmental and community impact assessment, as well as identifying critical operational deficiencies affecting freeway congestion, speed, and delay, etc.

In addition, it is important to re-emphasize the future physical improvements associated with changes in the LUE and UDE would be subject to project-level CEQA review requirements on a project specific basis, at the time it is proposed for consideration by the City.

Thank you for including Caltrans in the environmental review process for the City's General Plan Land Use and Urban Design Element. If you have any questions regarding these comments, you may contact Rick Holland, project coordinator at (213) 897 – 4230 or electronically at Rick.Holland@dot.ca.gov. Please refer to our internal record number 150536/RH.

Sincerely,



DIANNA WATSON
IGR/CEQA Branch Chief

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

GRACE ROBINSON HYDE
Chief Engineer and General Manager

June 16, 2015

Ref File No.: 3318767

Mr. Craig Chalfant, Planner
Development Services Department
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Dear Mr. Chalfant:

General Plan Land Use
and Urban Design Elements Project

The County Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report for the subject project on May 18, 2015. The City of Long Beach is located within the jurisdictional boundaries of District Nos. 3, 8, and 19. We offer the following comments regarding sewerage service:

1. The Districts own, operate, and maintain only the large trunk sewers that form the backbone of the regional wastewater conveyance system. Local collector and/or lateral sewer lines are the responsibility of the jurisdiction in which they are located. As such, the Districts cannot comment on any deficiencies in the sewerage system in the City of Long Beach (City) except to state that presently no deficiencies exist in Districts' facilities that serve the City. For information on deficiencies in the City sewerage system, please contact the City Department of Public Works and/or the Los Angeles County Department of Public Works.

2. The Districts should review individual developments within the City in order to determine whether or not sufficient trunk sewer capacity exists to serve each project and if Districts' facilities will be affected by the project.

3. The wastewater generated by the City is treated at the Joint Water Pollution Control Plant located in the City of Carson, which has a design capacity of 400 million gallons per day (mgd) and currently processes an average flow of 263 mgd, or the Long Beach Water Reclamation Plant, which has a design capacity of 25 mgd and currently processes an average flow of 15.1 mgd.

4. For a copy of the Districts' average wastewater generation factors, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.

5. The Districts are empowered by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the Districts' Sewerage System for increasing

Recycled Paper

the strength or quantity of wastewater attributable to a particular parcel or operation already connected. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate proposed projects. Payment of a connection fee will be required before a permit to connect to the sewer is issued. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and search for the appropriate link. For more specific information regarding the connection fee application procedure and fees, please contact the Connection Fee Counter at extension 2727.

6. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the design capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise you that the Districts intend to provide this service up to the levels that are legally permitted and to inform you of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Grace Robinson Hyde

Adriana R

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

SOUTHERN CALIFORNIA
ASSOCIATION of
GOVERNMENTS

Main Office

818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

t (213) 236-1800
f (213) 236-1825

www.scag.ca.gov

Officers

President
Cheryl Viegas-Walker, El Centro

First Vice President
Michele Martinez, Santa Ana

Second Vice President
Margaret Finlay, Duarte

Immediate Past President
Carl Morehouse, San Buenaventura

Executive/Administration Committee Chair

Cheryl Viegas-Walker, El Centro

Policy Committee Chairs

Community, Economic and Human Development
Bill Jahn, Big Bear

Energy & Environment
Deborah Robertson, Rialto

Transportation
Alan Wapner, San Bernardino Associated Governments

June 16, 2015

Mr. Craig Chalfant, Planner
City of Long Beach
Development Services Department, Planning Bureau
333 West Ocean Boulevard
Long Beach, California 90802
Phone: (562) 570-6368
Email: craig.chalfant@longbeach.gov

RE: SCAG Comment on the Notice of Preparation of a Draft Environmental Impact Report for the General Plan Land Use & Urban Design Elements Project [SCAG NO. IGR8468]

Dear Mr. Chalfant,

Thank you for submitting the Notice of Preparation of a Draft Environmental Impact Report for the General Plan Land Use and Urban Design Elements Project ("proposed project") to the Southern California Association of Governments (SCAG) for review and comment. SCAG is the authorized regional agency for Inter-Governmental Review (IGR) of programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12372. Additionally, SCAG reviews the Environmental Impact Reports of projects of regional significance for consistency with regional plans pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.

SCAG is also the designated Regional Transportation Planning Agency under state law, and is responsible for preparation of the Regional Transportation Plan (RTP) including its Sustainable Communities Strategy (SCS) component pursuant to SB 375. As the clearinghouse for regionally significant projects per Executive Order 12372, SCAG reviews the consistency of local plans, projects, and programs with regional plans.[1] Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of the regional goals and policies in the RTP/SCS.

SCAG staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the General Plan Land Use and Urban Design Elements Project. The proposed project consists of updates to the City of Long Beach General Plan Land Use Element (LUE) and adoption of a new General Plan Urban Design Element (UDE).

When available, please send environmental documentation to SCAG's *office in Los Angeles or by email to sunl@scag.ca.gov* providing, at a minimum, the full public comment period for review. If you have any questions regarding the attached comments, please contact Lijin Sun, Esq., Senior Regional Planner, at (213) 236-1882 or sunl@scag.ca.gov. Thank you.

Sincerely,

Ping Chang

Ping Chang,
Program Manager II, Land Use and Environmental Planning

---

[1] SB 375 amends CEQA to add Chapter 4.2 Implementation of the Sustainable Communities Strategy, which allows for certain CEQA streamlining for projects consistent with the RTP/SCS. Lead agencies (including local jurisdictions) maintain the discretion and will be solely responsible for determining "consistency" of any future project with the SCS. Any "consistency" finding by SCAG pursuant to the IGR process should not be construed as a finding of consistency under SB 375 for purposes of CEQA streamlining.

The Regional Council consists of 86 elected officials representing 191 cities, six counties, six County Transportation Commissions, one representative from the Transportation Corridor Agencies, one Tribal Government representative and one representative for the Air Districts within Southern California.

2015.5.7 printed on recycled paper

**COMMENTS ON THE NOTICE OF PREPARATION OF
A DRAFT ENVIRONMENTAL IMPACT REPORT FOR
THE GENERAL PLAN LAND USE & URBAN DESIGN ELEMENTS PROJECT [SCAG NO. IGR8468]**

CONSISTENCY WITH RTP/SCS

SCAG reviews environmental documents for regionally significant projects for their consistency with the adopted RTP/SCS.

2012 RTP/SCS Goals

The SCAG Regional Council adopted the 2012 RTP/SCS in April 2012. The 2012 RTP/SCS links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations (see http://rtpscs.scag.ca.gov). The goals included in the 2012 RTP/SCS may be pertinent to the proposed project. These goals are meant to provide guidance for considering the proposed project within the context of regional goals and policies. Among the relevant goals of the 2012 RTP/SCS are the following:

SCAG 2012 RTP/SCS GOALS	
RTP/SCS G1:	*Align the plan investments and policies with improving regional economic development and competitiveness*
RTP/SCS G2:	*Maximize mobility and accessibility for all people and goods in the region*
RTP/SCS G3:	*Ensure travel safety and reliability for all people and goods in the region*
RTP/SCS G4:	*Preserve and ensure a sustainable regional transportation system*
RTP/SCS G5:	*Maximize the productivity of our transportation system*
RTP/SCS G6:	*Protect the environment and health for our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking)*
RTP/SCS G7:	*Actively encourage and create incentives for energy efficiency, where possible*
RTP/SCS G8:	*Encourage land use and growth patterns that facilitate transit and non-motorized transportation*
RTP/SCS G9:	*Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies*

For ease of review, we encourage the use of a side-by-side comparison of SCAG goals with discussions of the consistency, non-consistency or non-applicability of the policy and supportive analysis in a table format. Suggested format is as follows:

SCAG 2012 RTP/SCS GOALS		
	Goal	Analysis
RTP/SCS G1:	*Align the plan investments and policies with improving regional economic development and competitiveness*	*Consistent: Statement as to why;* *Not-Consistent: Statement as to why;* *Or* *Not Applicable: Statement as to why; DEIR page number reference*
RTP/SCS G2:	*Maximize mobility and accessibility for all people and goods in the region*	*Consistent: Statement as to why;* *Not-Consistent: Statement as to why;* *Or* *Not Applicable: Statement as to why; DEIR page number reference*
etc.		etc.

RTP/SCS Strategies

To achieve the goals of the 2012 RTP/SCS, a wide range of strategies are included in SCS Chapter (starting on page 152) of the RTP/SCS focusing on four key areas: 1) Land Use Actions and Strategies; 2) Transportation Network Actions and Strategies; 3) Transportation Demand Management (TDM) Actions and Strategies and; 4) Transportation System Management (TSM) Actions and Strategies. If applicable to the proposed project, please refer to these strategies as guidance for considering the proposed project within the context of regional goals and policies. To access a listing of the strategies, please visit http://rtpscs.scag.ca.gov/Documents/2012/final/f2012RTPSCS.pdf (Tables 4.3 – 4.7, beginning on page 152).

Regional Growth Forecasts

At the time of this letter, the most recently adopted SCAG forecasts consists of the 2020 and 2035 RTP/SCS population, household and employment forecasts. To view them, please visit http://scag.ca.gov/Documents/2012AdoptedGrowthForecastPDF.pdf. The forecasts for the region and applicable jurisdictions are below.

	Adopted SCAG Region Wide Forecasts		**Adopted City of Long Beach Forecasts**	
	Year 2020	**Year 2035**	**Year 2020**	**Year 2035**
Population	19,663,000	22,091,000	491,000	534,100
Households	6,458,000	7,325,000	175,600	188,900
Employment	8,414,000	9,441,000	176,000	184,800

MITIGATION

SCAG staff recommends that you review the SCAG 2012 RTP/SCS Final Program EIR Mitigation Measures for guidance, as appropriate. See Chapter 6 (beginning on page 143) at: http://rtpscs.scag.ca.gov/Documents/peir/2012/final/Final2012PEIR.pdf

As referenced in Chapter 6, a comprehensive list of example mitigation measures that may be considered as appropriate is included in Appendix G: *Examples of Measures that Could Reduce Impacts from Planning, Development and Transportation Projects.* Appendix G can be accessed at: http://rtpscs.scag.ca.gov/Documents/peir/2012/final/2012fPEIR_AppendixG_ExampleMeasures.pdf

APPENDIX B:

AIR QUALITY IMPACT ANALYSIS

This page intentionally left blank

DRAFT

AIR QUALITY IMPACT ANALYSIS

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS PROJECT

CITY OF LONG BEACH, CALIFORNIA

LSA

June 2019

This page intentionally left blank

DRAFT

AIR QUALITY IMPACT ANALYSIS

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS PROJECT

CITY OF LONG BEACH, CALIFORNIA

Submitted to:

City of Long Beach
Development Services/Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

LSA
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

Project No. CLB1804

June 2019

This page intentionally left blank

TABLE OF CONTENTS

TABLE OF CONTENTS i
FIGURES AND TABLES iii
LIST OF ABBREVIATIONS AND ACRONYMS v
INTRODUCTION 1
PROJECT DESCRIPTION 1
Land Use Element 1
Urban Design Element 5
General Plan Anticipated Build Out 9
BACKGROUND 10
Air Pollutants and Health Effects 10
Ozone 11
Carbon Monoxide 11
Particulate Matter 11
Nitrogen Dioxide 11
Sulfur Dioxide 12
Lead 12
Toxic Air Contaminants 12
Greenhouse Gases and Global Climate Change 16
Carbon Dioxide 17
Methane 18
Nitrous Oxide 18
Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride 18
Black Carbon 18
Air Quality Regulatory Setting 19
Federal Clean Air Act 19
California Clean Air Act 19
California Air Resources Board 19
South Coast Air Quality Management District 21
Southern California Association of Governments 22
City of Long Beach General Plan Air Quality Element 24
City of Long Beach General Plan Mobility Element 26
City of Long Beach Sustainable City Action Plan 28
City of Long Beach Climate Action and Adaptation Plan 29
Global Climate Change Regulation 29
Federal Regulations 29
State Regulations 30
SETTING 35
Attainment Status 35
Existing Climate and Air Quality 36
Air Quality Monitoring Results 37
Existing Setting 38
Existing City of Long Beach Criteria Air Pollutant Emissions Inventory 38

Multiple Air Toxics Exposure Study IV 38
Sensitive Receptors 41

METHODOLOGY AND THRESHOLDS 41

Methodology 41
Operational Criteria Pollutant Emissions 42
Greenhouse Gas Emissions 43
Thresholds of Significance for Air Quality 44
South Coast Air Quality Management District Thresholds 45
Regional Significance Thresholds 45
CO Hotspots 46
Health Risk Thresholds 46
Thresholds for Localized Significance 47
Thresholds of Significance for Greenhouse Gas Emissions 47
CEQA Guidelines for GHG 47
Consistency with the Statewide GHG Reduction Targets 48

IMPACTS, COMPLIANCE MEASURES, AND MITIGATION MEASURES 48

Air Quality Impacts 48
Clean Air Plan Impact Analysis 49
Summary 50
Construction Impact Analysis 51
Regional Emissions Impact Analysis 55
Construction During Project Operation 60
Toxic Air Contaminant Impact Analysis 60
CO Hot Spots 62
Sensitive Receptor Impact Analysis 64
Odor Impact Analysis 69
Compliance Measures 70
Level of Significance Before Mitigation Measures 71
Air Quality Mitigation Measures 71
Level of Significance After Mitigation 74
Greenhouse Gas Emission impacts 75
Existing Conditions 75
Greenhouse Gas Emissions Analysis 76
Greenhouse Gas Reduction Plan Consistency Analysis 81
Level of GHG Significance Before Mitigation 84
Mitigation Measures 84
Level of Significance After Mitigation 84

APPENDICES

A: EMISSIONS CALCULATIONS
B: CITY OF LONG BEACH CLIMATE ACTION AND ADAPTATION PLAN GHG EMISSIONS REDUCTION TARGET OPTIONS MEMO

FIGURES AND TABLES

FIGURES

Figure 1: Project Location 3
Figure 2: Project PlaceTypes 7

TABLES

Table A: Sources and Health Effects of Air Pollutants 13
Table B: Federal and State Ambient Air Quality Standards 14
Table C: Global Warming Potential of Greenhouse Gases 17
Table D: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets 33
Table E: Attainment Status of Criteria Pollutants in the South Coast Air Basin 36
Table F: Ambient Air Quality at the Long Beach 2425 Webster Street Monitoring Station 39
Table G: Existing City of Long Beach Regional Criteria Air Pollutant Emissions Inventory 40
Table H: South Coast Air Quality Management District Construction and Operational Significance Thresholds 46
Table I: SCAQMD Toxic Air Contaminants Incremental Risk Thresholds 46
Table J: Construction Emissions in Pounds Per Day 52
Table K: City of Long Beach Regional Criteria Air Pollutant Emissions Inventory 57
Table L: City of Long Beach Regional Criteria Air Pollutant Emissions Summary and Comparison 58
Table M: Combined Annual Construction and Operational Emissions 60
Table N: CARB Recommendations for Siting New Sensitive Land Uses 65
Table O: Existing City of Long Beach Greenhouse Gas Emissions Inventory 75
Table P: Anticipated General Plan Build Out 2040 GHG Emissions Inventory 77
Table Q: Statewide GHG Emissions Reduction Strategies 82

This page intentionally left blank

LIST OF ABBREVIATIONS AND ACRONYMS

1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
°C	degrees Celsius
°F	degrees Fahrenheit
$\mu g/m^3$	micrograms per cubic meter
AAQS	ambient air quality standards
AB	Assembly Bill
ABAU	adjusted business-as-usual
ADT	average daily trips
afy	acre-feet per year
AQIA	Air Quality Impact Analysis
AQMP	Air Quality Management Plan
BAAQMD	Bay Area Air Quality Management District
Basin	South Coast Air Basin
BAU	business-as-usual
BC	Black Carbon
BMPs	Best Management Practices
C_2F_6	hexafluoromethane
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFÉ	Corporate Average Fuel Economy
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards

CARB	California Air Resources Board
CARB Handbook	California Air Resources Board Air Quality and Land Use Handbook
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAT	Climate Action Team
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCST	California Council on Science and Technology
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CF_6	tetrafluoromethane
CH4	methane
City	City of Long Beach
CNG	compressed natural gas
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
DPM	diesel particulate matter
EO	Executive Order
FHWA	Federal Highway Administration
ft	foot/feet
GHG	greenhouse gas

GPS	global positioning system
GWP	Global Warming Potential
HFCs	hydrofluorocarbons
HRA	Health Risk Assessment
I-405	Interstate 405
I-710	Interstate 710
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LGOP	Local Government Operations Protocol
LOS	level of service
LSA	LSA Associates, Inc.
LST	localized significance threshold
LUE	Land Use Element
LUE/UDE	Land Use Element/Urban Design Element
MATES	Multiple Air Toxics Exposure Study
MMLOS	Multimodal Level of Service
MMT	million metric tons
MOG	Mobility of Goods
MOP	Mobility of People
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MT	metric tons
MT CO_2e/yr	metric tons of carbon dioxide equivalent per year

MT CO_2e/yr/SP	metric tons of carbon dioxide equivalent per year per service population
MWh	megawatt hours
MWh/yr	megawatt hours per year
N/A	Not applicable
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	Ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
Pb	lead
PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
RCP	Regional Comprehensive Plan
ROCs	reactive organic compounds
ROGs	reactive organic gases
RPS	Renewable Portfolio Standard

RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAP	Sustainable City Action Plan
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SELAC	Southeast Los Angeles County
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SoCal Gas	Southern California Gas Company
SO_X	sulfur oxides
SP	service population
SRE	Scenic Routes Element
TAC	toxic air contaminant
TAZ	Traffic Analysis Zones
T-BACTs	best available control technologies for toxics
TDM	transportation demand management
TIA	Traffic Impact Analysis
TOD	transit-oriented development
tpd	tons per day
UDE	Urban Design Element
USEPA	United States Environmental Protection Agency

UWMP	Urban Water Management Plan
VMT	vehicle miles traveled
VOCs	volatile organic compounds
Working Group	GHG CEQA Significance Threshold Working Group
WRCC	Western Regional Climate Center

AIR QUALITY IMPACT ANALYSIS

INTRODUCTION

LSA has completed an Air Quality Impact Analysis (AQIA) for the proposed General Plan Land Use and Urban Design Elements (proposed project) in the City of Long Beach (City) in the County of Los Angeles. Figure 1 shows the project location and a detailed vicinity map.

This AQIA has been prepared using methods and assumptions recommended in the CEQA Air Quality Handbook of the South Coast Air Quality Management District (SCAQMD). In keeping with these guidelines, this analysis describes existing air quality and potential impacts generated by the implementation of the proposed project related to generated criteria air pollutants and greenhouse gas (GHG) emissions. Mitigation measures to reduce or eliminate significant air quality impacts are identified, where appropriate.

PROJECT DESCRIPTION

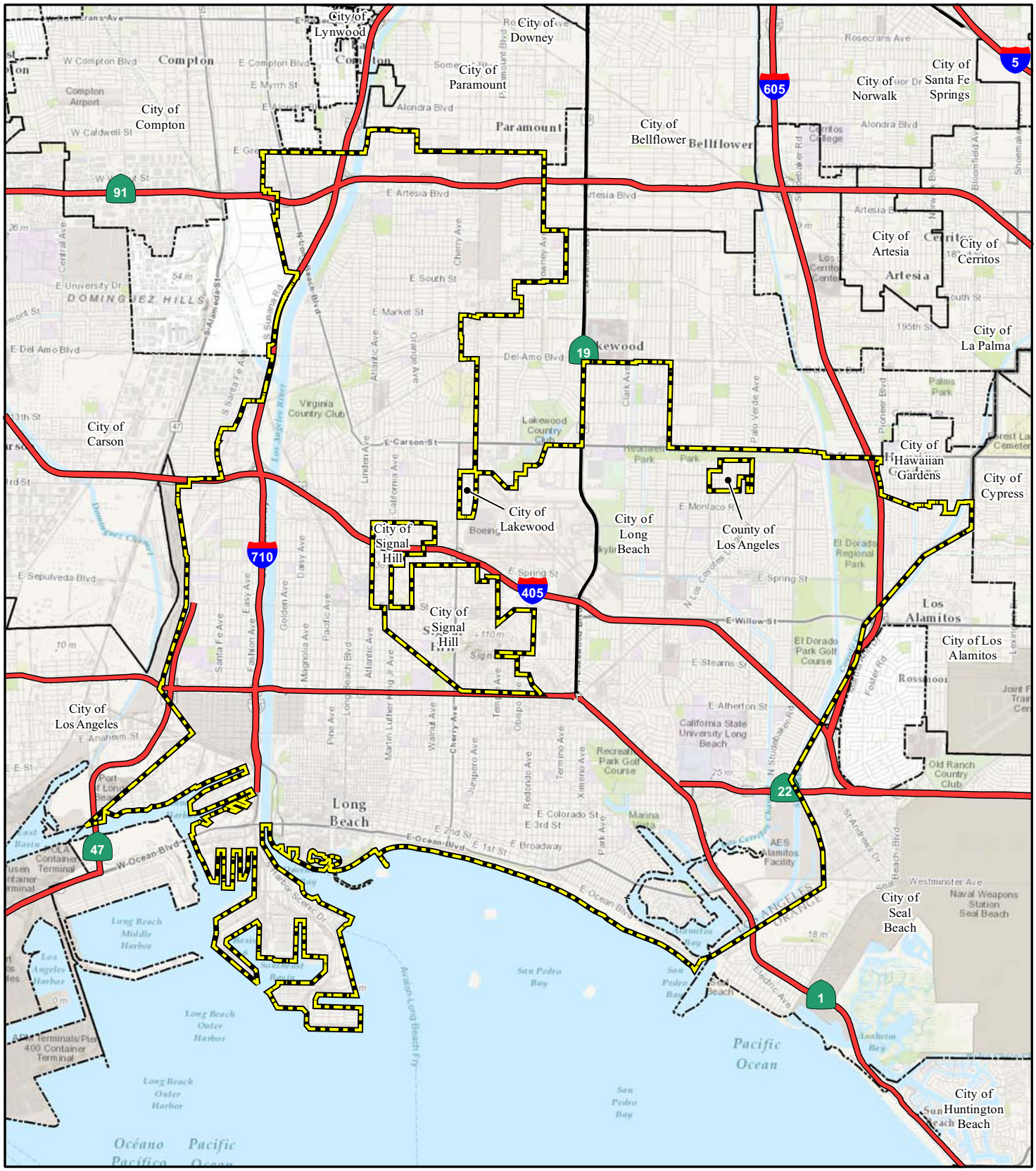
As illustrated by Figure 1, Project Location, the City (also referred to as the "planning area") includes the entire 50 square miles within the limits of the City of Long Beach (excluding the City of Signal Hill, which is completely surrounded by the City of Long Beach) in Los Angeles County (County), California. The City is bordered on the west by the Cities of Carson and Los Angeles (including Wilmington and the Port of Los Angeles); on the north by the Cities of Compton, Paramount, and Bellflower, and the unincorporated community of Rancho Dominguez; and on the east by the Cities of Lakewood, Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach, and the unincorporated community of Rossmoor. The Pacific Ocean borders the southern portion of the City, and as such, portions of the City are located within the California Coastal Zone.

The proposed project is an update to the City's existing General Plan and is intended to guide growth and future development through the horizon year 2040. While the existing General Plan does not currently include an Urban Design Element (UDE), the existing Scenic Routes Element (1975) (SRE) designates roadways within the City for which view protection should be considered and also establishes varying design standards to ensure the continued maintenance of the aesthetic character of these roadways. The proposed project includes the approval of both the General Plan Land Use Element (LUE) and Urban Design Element (UDE), which would replace the existing LUE and SRE. The following discussion summarizes the key components of each of the proposed General Plan Elements.

Land Use Element

The proposed updated LUE would include nine distinct Community Plan Areas, comprised of the following: (1) North Long Beach; (2) Bixby Knolls; (3) Westside and Wrigley; (4) Eastside; (5) Central; (6) Traffic Circle; (7) Downtown; (8) Midshore; and (9) Southeast. While there are over 70 neighborhoods identified by residents of the City, the community plan areas are defined by strong physical boundaries such as freeways, rivers, city boundaries, and railroad tracks. For each Community Plan Area, the proposed LUE provides a description of its geographic context, outlines issues and needs unique to the area, and establishes neighborhood-specific land use strategies.

This page intentionally left blank



LSA

LEGEND

Project Area (City of Long Beach)

N

0 1 2
MILES

SOURCE: Bing Maps (c. 2008); ESRI (2008)

I:\CLB1804\G\Chapter 3\Project_Loc.cdr (10/12/2018)

FIGURE 1

Long Beach General Plan
Land Use and Urban Design Elements

Project Location

This page intentionally left blank

In addition to establishing Community Plan Areas, the proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach in the existing LUE of segregating property within the City through traditional land use designations and zoning classifications. The updated LUE would establish 14 primary PlaceTypes that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land uses within these areas. Each PlaceType would be defined by unique land use, form, and character-defining goals, policies, and implementation strategies tailored specifically to the particular application of that PlaceType within the City. The PlaceTypes are shown in Figure 2.

The new LUE would reflect the current needs and opportunities within the City, update land uses and bring the General Plan into conformity with the City's adopted General Plan Mobility Element (October 2013). The project would also provide for future development opportunities that would alleviate overcrowding documented in the City's Assessment of Fair Housing, and would accommodate projected growth and housing needs established in the City's General Plan 2013–2021 Housing Element and the 2016–2040 SCAG RTP/SCS.

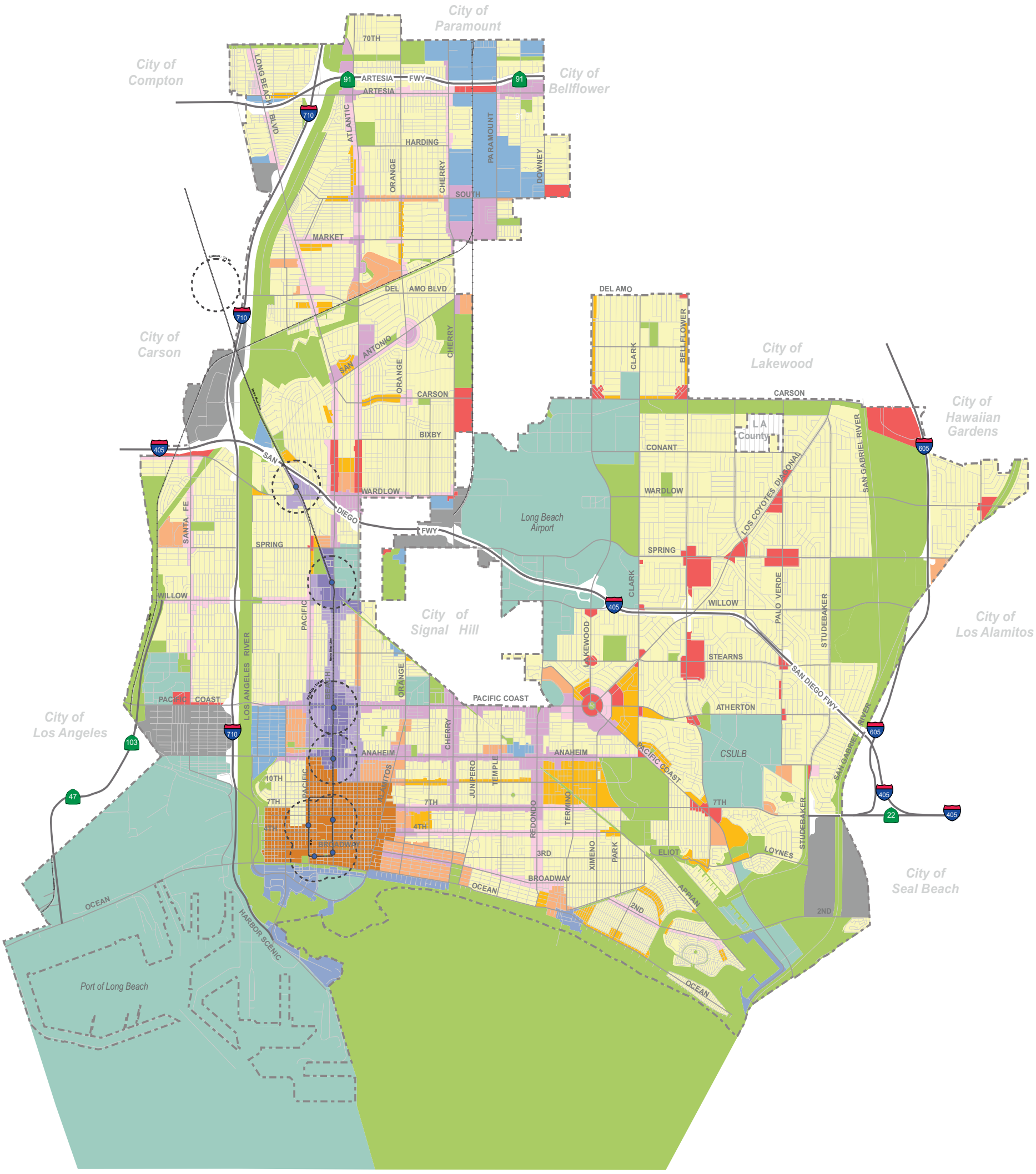
The proposed LUE would allow for the opportunity for major changes to approximately 13 percent of the City. These areas are referred to as "Major Areas of Change" throughout the LUE and signify areas where growth is anticipated to be most profound. However, areas that are not designated as "Major Areas of Change" and/or are not anticipated to result in changes in existing land use patterns may also experience demographic growth.

In establishing PlaceTypes and focusing new development within the Major Areas of Change, the proposed LUE takes into account existing land use patterns in the City, adopted land use plans, and the demand for new land uses and increased densities to alleviate overcrowding of existing residences and accommodate the projected population growth. The proposed LUE also considers the location of undeveloped or underutilized parcels that are best suited for future development and accounts for which types of land uses and infrastructure would be required to serve new development facilitated by the new PlaceType categories. While the proposed LUE would provide for new development opportunities, it would not cause development to occur. Rather, the proposed LUE recognizes that ultimately growth and development depend on the initiative of individual developers and property owners. The LUE strategically accommodates projected growth along key corridors and near transit.

Urban Design Element

Unlike the proposed LUE, the proposed UDE would be an entirely new element of the City's General Plan and would replace the existing SRE upon approval by the City Council. The decision to include a UDE in the City's General Plan grew from the City's stated need to provide an urban framework that addresses the varying aesthetic characteristics associated with the historic districts, traditional neighborhoods, auto-oriented commercial centers, urbanized centers, and corridors located throughout the City. As the City continues to evolve, the UDE seeks to shape the urban environment by preserving the character of existing neighborhoods that define the City's unique physical and aesthetic character while allowing for the continued evolution and improvement of the City in areas targeted for new development.

This page intentionally left blank



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD -L - Transit-Oriented Development - Low
- TOD -M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

LSA

N

0 .5 1
MILE

SOURCE: Proposed Long Beach General Plan Land Use Element, March 2018

FIGURE 2

Long Beach General Plan
Land Use and Urban Design Elements

Project PlaceTypes

I:\CLB1804\G\Chapter 3\Project Placetypes.cdr (1/30/2019)

This page intentionally left blank

The UDE would define the physical aspects of the urban environment. Specifically, the UDE aims to further enhance the City's PlaceTypes established in the LUE by creating great places; improving the urban fabric, and public spaces; and defining edges, thoroughfares, and corridors. It is the City's intention that creating great places would provide gathering spaces for community members to meet and provide a space for spontaneous activities to occur. By improving the urban fabric, the City would allow for new development that would complement the existing historical development while serving as a unique and distinctive feature of the City.

Similar to the concept of creating great places, the City aims to provide public spaces to allow for community engagement opportunities. The creation of edges, thoroughfares, and corridors would define the larger commercial and business centers of the City while also integrating pedestrian amenities that would provide transitions into adjacent PlaceTypes. Examples of such pedestrian amenities include the creation of "public rooms" where pedestrians can dine and gather along street frontages adjacent to ground-floor cafes and retail uses.

In addition to creating great places, urban fabrics, and public spaces, and defining edges, thoroughfares, and corridors, the City intends to utilize the UDE to foster healthy, sustainable neighborhoods; promote compact and connected development; minimize and fill in gaps in the urban fabric of existing neighborhoods; improve the cohesion between buildings, roadways, public spaces, and people; and improve the economic vitality of the City.

General Plan Anticipated Build Out

The proposed project would direct the long-term physical development in the City by guiding use, form, and characteristics of land improvements through the horizon year 2040. In order to plan for future growth in the City through the horizon year 2040, the proposed LUE accommodates demographic projections provided to the City by State and regional agencies. For the City and much of the Southern California region, the Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization (MPO) that prepares demographic projections. SCAG projects population and employment growth as part of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) process. For the 2016 RTP/SCS, SCAG forecasts population growth of 18,230 new residents and employment growth of 28,511 new jobs in the City by 2040.

The proposed LUE also incorporates housing projections provided by the Department of Housing and Community Development. Unlike other data projections, rather than being simply informative, the housing allocation provided to jurisdictions through the Regional Housing Needs Assessment (RHNA) process is enforceable through the Housing Accountability Act. As an outcome of the most recent RHNA process, the City is required to plan for 7,048 new dwelling units by the year 2021. Further, due to insufficient construction of new housing units within Long Beach and the region in the past, the City has many residential areas where existing housing units are overcrowded. In order to identify the number of new housing units required to alleviate overcrowding, the City engaged in an Assessment of Fair Housing with the United States Department of Housing and Urban Development (2016). As an outcome of this assessment, it was determined that the City has anticipated housing needs for 21,476 housing units to address existing housing needs. In total, 28,524 housing units are required to address future (7,048) and existing (21,476) housing needs. It is this number of units, which complies with both the State and federal assessments, which must be

accommodated in City planning documents, including the proposed LUE. Of the 28,524 new units, a total of 13,403 new housing units are already accommodated in recently approved specific plans (e.g., Downtown Plan, Midtown Specific Plan, and Southeast Area Specific Plan).[1] Therefore, the City would be required to facilitate the development of 15,121 new housing units outside of these specific plan areas.

As a result of the processes described above, anticipated build out of the proposed project includes the following quantities of demographic data growth:

- Population: 18,230 new residents, for a total of 484,485 by 2040
- Housing: 28,524 new dwelling units, for a total of 192,318 by 2040
- Employment: 28,511 new jobs anticipated, for a total of 181,665 by 2040

BACKGROUND

This section provides background information on air pollutants and their health effects. It also provides regulatory background information, including information from the California Air Resources Board's (CARB) *Air Quality and Land Use Handbook*[2] (CARB Handbook); a description of the general health risks of toxics, and the significance criteria for project evaluation.

Air Pollutants and Health Effects

Both State and Federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants:[3] carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no known direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This

[1] In total, 39.3 percent of the anticipated future housing growth would occur within these Specific Plan areas (i.e., 17.5 percent in the Downtown area, 12.7 percent in the Transit-Oriented Development areas of the Midtown Specific Plan, and 9.1 percent in the Southeast Area Specific Plan).

[2] California Air Resources Board (ARB), 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

[3] United States Environmental Protection Agency (EPA), 2014. Criteria pollutants are defined as those pollutants for which the Federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_X) and reactive organic gases (ROG).

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

Ozone

Rather than being directly emitted, ozone (smog) is formed by photochemical reactions between NO_X and ROG. Ozone is a pungent, colorless gas. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the summer and early fall months.

Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are 10 microns or less in diameter, or PM_{10}. Fine, suspended particulate matter with an aerodynamic diameter of 2.5 microns or less, or $PM_{2.5}$, is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as byproducts of fuel combustion; through abrasion, such as tire or brake lining wear; or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

Nitrogen Dioxide

NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has multiple adverse neurotoxic health effects, and children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the United States Environmental Protection Agency (USEPA) strengthened the national ambient air quality standard for lead by lowering it from 1.5 to 0.15 micrograms per cubic meter ($\mu g/m^3$). The USEPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas, resulting in an increase in 76 monitors nationally.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the USEPA and the CARB. Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

TACs do not have ambient air quality standards, but are regulated by the USEPA, CARB, and the SCAQMD. In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. The CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[1] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources—primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as "on-road" sources such as trucks and buses traveling on freeways and local roadways.

[1] CARB, 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[1] The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and Federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The CARB anticipates that by 2020, average statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the CARB's Diesel Risk Reduction Plan,[2] meaning that the statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000.

Table A summarizes the sources and health effects of air pollutants discussed in this section. Table B presents a summary of State and Federal ambient air quality standards (AAQS).

Table A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust • Natural events, such as decomposition of organic matter	• Reduced tolerance for exercise • Impairment of mental function • Impairment of fetal development • Death at high levels of exposure • Aggravation of some heart diseases (angina)
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust • High temperature stationary combustion • Atmospheric reactions	• Aggravation of respiratory illness • Reduced visibility • Reduced plant growth • Formation of acid rain
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight	• Aggravation of respiratory and cardiovascular diseases • Irritation of eyes • Impairment of cardiopulmonary function • Plant leaf injury
Lead (Pb)	• Contaminated soil	• Impairment of blood functions and nerve construction • Behavioral and hearing problems in children
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels • Construction activities • Industrial processes • Atmospheric chemical reactions	• Reduced lung function • Aggravation of the effects of gaseous pollutants • Aggravation of respiratory and cardiorespiratory diseases • Increased cough and chest discomfort • Soiling • Reduced visibility
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels • Smelting of sulfur-bearing metal ores Industrial processes	• Aggravation of respiratory diseases (asthma, emphysema) • Reduced lung function • Irritation of eyes • Reduced visibility • Plant injury • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board (2015).

[1] CARB, 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

[2] Ibid.

Table B: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone (O3)[h]	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[i]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter (PM2.5)[i]	24-Hour	-		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	–	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO2)[j]	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemi-luminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	-	
Lead (Pb)[l,m]	30-Day Average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3 (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average[i]	–		0.15 µg/m^3		
Sulfur Dioxide (SO2)[k]	24-Hour	0.04 ppm (105 µg/m3)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)[k]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Visibility-Reducing Particles[l]	8-Hour	See footnote n	Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[j]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[i] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[k] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[l] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[n] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
CARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
ppb = parts per billion
ppm = parts per million
mg/m^3 = milligrams per cubic meter
$\mu g/m^3$ = micrograms per cubic meter

Source: California Air Resources Board, 2016. https://www.arb.ca.gov/research/aaqs/aaqs2.pdf

Greenhouse Gases and Global Climate Change

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) or 1.1 ± 0.4° Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other greenhouse gases (GHGs) are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[1]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "GHGs" will refer collectively to the six gases listed above only.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the

[1] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature.

atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table C shows the GWP for each type of GHG. For example, sulfur hexafluoride is 22,800 times more potent at contributing to global warming than carbon dioxide.

Table C: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC* (Intergovernmental Panel on Climate Change, 2007).

The following discussion summarizes the characteristics of the six GHGs and black carbon.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic out gassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

In 2016, CO_2 emissions accounted for approximately 83 percent of California's overall GHG emissions.[1] The transportation sector accounted for California's largest portion of CO_2 emissions, approximately 39 percent, with gasoline consumption making up the greatest portion of these emissions. Industrial sources were California's second largest category of GHG emissions.

[1] California Air Resources Board. 2018. *California Greenhouse Gas Emission Inventory – 2018 Edition*. July 11. Website: www.arb.ca.gov/cc/inventory/data/data.htm (accessed March 2019).

Methane

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California. Methane accounted for approximately 9.0 percent of GHG emissions in California in 2016.[1]

Total annual emissions of methane in California are approximately 38.9 million tons, with manmade emissions accounting for the majority. As with CO_2, the major removal process of atmospheric methane—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

Nitrous Oxide

Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. Nitrous oxide emissions accounted for approximately 3 percent of GHG emissions in California in 2016.[2]

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[3] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 6 percent of man-made GHG emissions (CO_2e) in California in 2016.[4]

Black Carbon

Black carbon is the most strongly light-absorbing component of PM formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of $PM_{2.5}$ and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in

---

1 California Air Resources Board. 2018. *California Greenhouse Gas Emission Inventory – 2018 Edition*. July 11. Website: www.arb.ca.gov/cc/inventory/data/data.htm (accessed March 2019).

2 Ibid.

3 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

4 Ibid.

the atmosphere, black carbon can absorb one million times more energy than CO_2.[1] Black carbon contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global-warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel fueled vehicles. The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. The CARB estimates that the annual black carbon emissions in California have decreased approximately 70 percent between 1990 and 2010 and are expected to continue to decline significantly due to controls on mobile diesel emissions.

Air Quality Regulatory Setting

The USEPA and the CARB regulate direct emissions from motor vehicles. The SCAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations.

Federal Clean Air Act

The 1970 Federal Clean Air Act authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The Federal Clean Air Act Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

California Clean Air Act

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain CAAQS for carbon monoxide, ozone, sulfur dioxide, and nitrogen dioxide by the earliest practical date. The California Clean Air Act provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

California Air Resources Board

The CARB is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

[1] U.S. Environmental Protection Agency, 2015. *Black Carbon*. September. Website: www3.epa.gov/black carbon/basic.html (accessed March 2019).

Assembly Bill 2588 Air Toxics "Hot Spots" Information and Assessment Act. Under Assembly Bill (AB) 2588, stationary sources of air pollutants are required to report the types and quantities of certain substances their facilities routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, determine health risks, and notify nearby residents of significant risks.

The California Air Resources Board Handbook. The CARB has developed an Air Quality and Land Use Handbook[1] which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. According to the CARB Handbook, recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. The CARB Handbook recommends that county and city planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools, and playgrounds.

Land use designations with air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the CARB Handbook include taking steps to avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day;
- Within 1,000 feet of a major service and maintenance rail yard;
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries;
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet); and
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The CARB Handbook specifically states that its recommendations are advisory and acknowledges land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

The recommendations are generalized and do not consider site-specific meteorology, freeway truck percentages, or other factors that influence risk for a particular project site. The purpose of this guidance is to further examine project sites for actual health risk associated with the location of new sensitive land uses.

[1] CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

South Coast Air Quality Management District

The SCAQMD has jurisdiction over most air quality matters in the South Coast Air Basin (Basin). This area includes all of Orange County, Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. Los Angeles County is a subregion of the SCAQMD jurisdiction. The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin and is tasked with implementing certain programs and regulations required by the CAA and the CCAA. The SCAQMD prepares plans to attain State and national ambient air quality standards (NAAQS). SCAQMD is directly responsible for reducing emissions from stationary (area and point) sources. The SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and enforces such measures though educational programs or fines, when necessary.

The proposed project could be subject to the following SCAQMD rules and regulations:

- **Regulation IV - Prohibitions:** This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air pollutant emissions, fuel contaminants, start-up/shutdown exemptions, and breakdown events.
    - **Rule 402 - Nuisance:** This rule restricts the discharge of any contaminant in quantities that cause or have a natural ability to cause injury, damage, nuisance, or annoyance to businesses, property, or the public.
    - **Rule 403 - Fugitive Dust:** This rule requires the prevention, reduction, or mitigation of fugitive dust emissions from a project site. Rule 403 restricts visible fugitive dust to a project property line, restricts the net PM_{10} emissions to less than 50 $\mu g/m^3$ and restricts the tracking out of bulk materials onto public roads. Additionally, Rule 403 requires an applicant to utilize one or more of the best available control measures (identified in the tables within the rule). Control measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities. Finally, Rule 403 requires that a contingency plan be prepared if so determined by the USEPA. In addition, SCAQMD Rule 403(e), Additional Requirements for Large Operations, includes requirements to provide Large Operation Notification Form 403 N, appropriate signage, additional dust control measures, and employment of a dust control supervisor that has successfully completed the Dust Control training class in the South Coast Air Basin.
- **Regulation XI - Source Specific Standards:** Regulation XI sets emissions standards for different sources.
    - **Rule 1113 - Architectural Coatings:** This rule limits the amount of volatile organic compounds (VOCs) from architectural coatings and solvents, which lowers the emissions of odorous compounds.

The SCAQMD is responsible for demonstrating regional compliance with ambient air quality standards but has limited indirect involvement in reducing emissions from fugitive, mobile, and

natural sources. To that end, the SCAQMD works cooperatively with the CARB, the Southern California Association of Governments (SCAG), county transportation commissions, local governments, and other Federal and State government agencies. It has responded to this requirement by preparing a series of AQMPs to meet the CAAQS and NAAQS. SCAQMD and the SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the South Coast Air Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. Every 3 years, SCAQMD prepares a new AQMP, updating the previous plan and 20-year horizon.[1]

SCAQMD approved the 2016 AQMP on March 3, 2017, and submitted the plan to CARB on March 10, 2017. Key elements of the 2016 AQMP include the following:

- Calculating and taking credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation)
- A strategy with fair-share emission reductions at the federal, State, and local levels
- Investment in strategies and technologies meeting multiple air quality objectives
- Seeking new partnerships and significant funding for incentives to accelerate deployment of zero-emission and near-zero emission technologies
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the O_3 strategy
- Attainment of the 1-hour O_3 standard by 2022 with no reliance on “black box” future technology (FCAA Section 182(e)(5) measures)

Southern California Association of Governments

SCAG is a council of governments for Los Angeles, Orange, Riverside, San Bernardino, Imperial, and Ventura Counties. It is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy and community development, and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With regard to air quality planning, SCAG prepares the RTP and Regional Transportation Improvement Program (RTIP), which address regional development and growth forecasts and form the basis for the land use and transportation control portions of the AQMP and are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. The RTP, RTIP, and AQMP are based on projections originating within local jurisdictions.

[1] South Coast Air Quality Management District (SCAQMD), 2016. *Final 2016 Air Quality Management Plan*. March.

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan (RCP) provides growth forecasts that are used in the development of air quality–related land use and transportation control strategies by the SCAQMD. The RCP is a framework for decision-making for local governments, assisting them in meeting Federal and State mandates for growth management, mobility, and environmental standards, while maintaining consistency with regional goals regarding growth and changes. Policies within the RCP include consideration of air quality, land use, transportation, and economic relationships by all levels of government.

On April 7, 2016, SCAG adopted the 2016–2040 RTP/SCS. Using growth forecasts and economic trends, the RTP provides a vision for transportation throughout the region for the next 20 years. It considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address mobility needs. The SCS is a newly required element of the RTP, which integrates land use and transportation strategies to achieve CARB emissions reduction targets. The inclusion of the SCS is required by Senate Bill (SB) 375, which was enacted to reduce GHG emissions from automobiles and light trucks through integrated transportation, land use, housing, and environmental planning. The RTP/SCS would successfully achieve and exceed the GHG emission-reduction targets set by the CARB by achieving an 8 percent reduction by 2020, an 18 percent reduction by 2035, and a 21 percent reduction by 2040 compared to the 2005 level on a per capita basis. This RTP/SCS also meets criteria pollutant emission budgets set by the USEPA.

The 2016–2040 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the NAAQS as set forth by the CAA. Even with ongoing aggressive control strategies, ever more stringent national O_3 standards require further NO_X emission reductions in the SCAG region. In the Basin, for example, it is estimated that NO_X emissions will need to be reduced by approximately 50 percent in 2023 and an additional 15 percent NO_X reduction beyond 2023 levels by 2031. Most sources of NO_X emissions, cars and factories, are already controlled by over 90 percent. The level of emission reduction required is so significant that 2030 emissions forecast from just three sources—ships, trains, and aircraft—would lead to O_3 levels near the Federal standard. To accomplish the reduction required to meet O_3 standards, the 2016–2040 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2023–2040 time frame and clear steps to move toward this objective.

SCAG submits a list of transportation-related projects (in the RTP/SCS) for potential funding by the Federal Highway Administration (FHWA). The FHWA will review and approve either portions of, or all of, the list of transportation projects. This review will include a determination regarding whether the Federal agency's actions on these transportation projects would conform to the California SIP. SCAQMD incorporates the SCAG RTP/SCS emission budget for mobile sources into the AQMP emissions inventory analysis for all sources of emissions (including stationary, area, and mobile). Conformity analysis and the USEPA review and approval actions are not subject to CEQA review.

City of Long Beach General Plan Air Quality Element

The City of Long Beach General Plan addresses air quality in the Air Quality Element. The Air Quality Element contains goals, policies, and actions in relation to government organization roles and responsibilities, ground transportation, air transportation, land use, particulate emission, energy conservation, and education. The following goals and policies from the City of Long Beach General Plan Air Quality Element are applicable to the proposed project.

- **Goal 1:** Effective coordination of air quality improvement efforts in the South Coast Air Basin, the Southeast Los Angeles County (SELAC) subregion of SCAG, and other agencies.
    - **Policy 1.1: Establish a Coordinated Approach.** Coordinate with other jurisdictions in the South Coast Air Basin a continuation of the consortium to establish air quality plans and implementation programs where practical.
    - **Policy 1.2: Encourage Community Participation.** Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.
- **Goal 2:** A diverse and efficient ground transportation system that minimizes air pollutant emissions.
    - **Policy 2.1.1: Reduce Vehicle Trips.** Use incentives, regulations, and transportation demand management techniques, in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips that would otherwise occur.
    - **Policy 2.1.2: Reduce Vehicle Miles Traveled.** Use incentives, regulations, and transportation demand management in cooperation with other jurisdictions in the South Coast Air Basin, to reduce vehicle miles traveled.
    - **Policy 2.1.3: Increase Cost-Effectiveness of Transportation and Parking Systems.** Make cost-effective improvements to transportation and parking systems that will reduce traffic congestion and resulting emissions.
    - **Policy 2.2.1: Modify Work Schedules.** Promote and establish modified work schedules that reduce peak period auto travel.
    - **Policy 2.3.1: Expand Transit in the City and the Region.** Cooperate in efforts to expand all forms of mass transit within the City and the South Coast Air Basin.
    - **Policy 2.4.1: Promote Non-Motorized Transportation.** Promote convenient and continuous bicycle paths and pleasant pedestrian environments that will encourage non-motorized travel within the City.
    - **Policy 2.5.1: Manage the Parking Supply.** Manage the City's parking supply to inhibit auto use, while ensuring that economic development goals are not sacrificed.

- **Policy 2.6.1: Support Legislation.** Participate with other local governments in seeking State and Federal legislation to improve vehicle/transportation technology and establish a direct link between the true cost of emissions and the sources of pollution.
- **Policy 2.6.2: Fleet Conversion to Clean Fuels.** Play a leadership role in the conversion to clean fuels by promoting the increased use of compressed natural gas (CNG), electric vehicles, and other alternative fuels.

- **Goal 3:** Minimum feasible emissions from Long Beach Airport.
  - **Policy 3.1: Promote Improved Technology.** Promote the use of the best available technology to reduce emissions from aircraft frequenting the Long Beach Airport.
- **Goal 4:** Minimum feasible emissions from the Ports of Long Beach and Los Angeles.
  - **Policy 4.1:** Minimize emissions from ships.
  - **Policy 4.2:** Reduce the impacts of rail-related emissions on Long Beach neighborhoods and the downtown.
  - **Policy 4.3:** Monitor particulate pollution at the Ports and locations downwind, and pursue methods of reducing emissions while accommodating needed growth.
- **Goal 5:** A pattern of land uses that can be efficiently served by a diversified transportation system and that directly and indirectly minimizes air pollutants.
  - **Policy 5.1: Manage Growth.** Regulate land use and promote development in a manner that will support established transit services and reduce the need for the automobile.
  - **Policy 5.2: Balance Growth.** Improve the balance between jobs and housing to create a more efficient urban form.
- **Goal 6:** Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling, and storage of materials.
  - **Policy 6.1: Control Dust.** Further reduce particulate emissions from roads, parking lots, construction sites, unpaved alleys, and port operations and related uses.
- **Goal 7:** Reduce emissions through reduced energy consumption.
  - **Policy 7.1: Energy Conservation.** Reduce energy consumption through conservation improvements and requirements.
  - **Policy 7.2: Recycle Wastes.** Promote local recycling of wastes and the use of recycled materials.

- **Goal 8:** Education of City residents concerning air quality, energy, and congestion issues, and the need to modify present travel behavior and energy consumption patterns.
    - **Policy 8.1:** Promote public education programs at the local, subregional, and regional level to encourage residents to modify their behavior to reduce automobile trips. Coordinate with the Long Beach Unified School District, the Long Beach City College, California State University Long Beach, the American Lung Association, other jurisdictions and agencies, and environmental groups in the development of programs and campaigns to increase awareness of, and the number of stakeholders in, air quality, energy, and congestion issues.

City of Long Beach General Plan Mobility Element

The Mobility Element[1] of the City of Long Beach General Plan aims at creating a safe, efficient, balanced, and multimodal mobility network that maintains and enhances air, ground, and water transportation capacity, and leads the region by example with innovative and experimental practices, including goals, policies, and actions that help reduce air pollutants and GHG emissions through more efficient transportation. The following goals, strategies, and policies from the City of Long Beach General Plan Mobility Element are applicable to the proposed project and will reduce air pollutant emissions including GHG emissions:

- **Goal 1:** Create a safe, efficient, balanced, and multimodal mobility network.
    - **Strategy 1:** Establish a network of complete streets that complements the related street type.
        - **Mobility of People (MOP) Policy 1-9:** Increase mode shift of transit, pedestrians, and bicycles.
        - **MOP Policy 1-12:** Encourage large employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education, and preferential parking for carpools/vanpools.
        - **MOP Policy 1-17:** Develop land use policies that focus development potential in locations best served by transit.
    - **Strategy 2:** Reconfigure streets to emphasize their modal priorities.
        - **MOP Policy 2-17:** Ensure safe, convenient, and adequate on- and off-street bicycle parking facilities to accommodate and encourage residents to cycle for commuting and daily needs.
    - **Strategy 3:** Strategically improve congested intersections and corridors.

[1] City of Long Beach. 2013. *Long Beach General Plan*. October.

- **MOP Policy 4-3:** Develop a new Multimodal Level of Service (MMLOS) methodology that includes the following components:
  - Emphasis on pedestrian and bicycle access and circulation.
  - Maintenance of appropriate emergency vehicle access and response time.
  - Support for reduced vehicle miles traveled.
  - Considers, but does not deem, auto congestion in Downtown or Long Beach Boulevard transit-oriented development (TOD) district to be an impact.

- **Strategy 5:** Reduce the environmental impacts of the transportation system.
  - **MOP Policy 5-2:** Reduce vehicle miles traveled (VMT) and vehicle trips through the use of alternative modes of transportation and Transportation Demand Management (TDM).
  - **MOP Policy 5-3:** Encourage the use of low- or no-emission vehicles to reduce pollution.
  - **MOP Policy 5-4:** Promote car-sharing and Neighborhood Electric Vehicle ownership as an important means to reduce traffic congestion.
  - **MOP Policy 5-5:** Sustain the recent improvements in air quality and achieve further significant progress in such improvements to meet State and Federal mandates.

- **Strategy 6:** Manage the supply of parking.
  - **MOP Policy 6-3:** Where appropriate, encourage the conversion of on-street parking space for expanded sidewalk widths or landscaping.
  - **MOP Policy 6-7:** Support using parking supply and pricing as a strategy to encourage use of non-automobile modes where feasible.
  - **MOP Policy 6-8:** Where applicable, encourage users to park once to meet all of their travel needs within the City.
  - **MOP Policy 6-11:** Encourage the use of transit, carpooling, and walking to reduce the need for parking.
  - **MOP Policy 6-12:** Promote transit-oriented development with reduced parking requirements around appropriate transit hubs and stations to facilitate the use of available transit services.

    - **MOP Policy 6-13:** Consider reducing parking requirements for mixed-use developments, for developments providing shared parking or a comprehensive TDM Program, or developments located near major transit hubs.
    - **MOP Policy 6-15:** Encourage and provide incentives for commercial, office, and industrial development to provide preferred parking for carpools, vanpools, electric vehicles, and flex cars.

- **Goal 3:** Lead the region by example with innovative and experimental practices.
  - **Strategy 10:** Be a leader in regional cooperation on transportation issues.
  - **Strategy 11:** Adapt mobility strategies and programs based on new concepts and technologies that reduce environmental impacts and increase quality of life.
  - **Strategy 12:** Develop freight-related improvements consistent with the regional transportation network.
    - **Mobility of Goods (MOG) Policy 13-2:** Reduce truck congestion and parking impacts on city streets.
  - **Strategy 14:** Reduce the air quality impacts of freight transportation and port-related traffic.
    - **MOG Policy 14-1:** Provide for the efficient, clean, and safe movement of goods to support commerce and industry.
    - **MOG Policy 14-2:** Adopt and enforce truck routes to minimize the impacts of truck emissions on the community.
    - **MOG Policy 14-3:** Reduce congestion on freeways and designated truck routes.
    - **MOG Policy 14-4:** Encourage ridesharing activities within the Harbor District to reduce vehicle miles traveled (VMT) and parking space requirements in compliance with the South Coast Air Quality Management District requirements.

City of Long Beach Sustainable City Action Plan

The City of Long Beach's Sustainable City Action Plan (SCAP) was adopted in February 2010. The SCAP is intended to guide operational, policy, and financial decisions to create a more sustainable Long Beach. The SCAP includes initiatives, goals, and actions that will move Long Beach toward becoming a sustainable city. These goals and actions included in the SCAP relate to the following:

- Buildings & Neighborhoods
- Energy
- Green Economy & Lifestyle
- Transportation

- Urban Nature
- Waste Reduction
- Water

City of Long Beach Climate Action and Adaptation Plan

In 2017, the City of Long Beach began development of a Climate Action and Adaptation Plan (CAAP). The CAAP aims to reduce communitywide GHG emissions, and help the city adapt to future climate change impacts. As part of the CAAP, the City conducted a communitywide GHG inventory to identify its baseline emissions footprint, and is developing business-as-usual forecasts of emissions based on anticipated growth in population, employment, housing, and other factors in the community. In the next stages of the project, the City will establish GHG reduction targets and define local actions to achieve those targets.

The CAAP will provide a framework for creating or updating policies, programs, practices, and incentives for Long Beach residents and businesses to reduce the City's GHG footprint, and ensure the community and physical assets are better protected from the impacts of climate change. The policies, programs, practices, and incentives included in the CAAP will relate to the following:

- Public Health
- Water Supply
- Housing & Neighborhoods
- Coastal Resources
- Parks and Open Space
- Transportation
- Energy
- Wastewater/Stormwater

Global Climate Change Regulation

This section describes regulations related to Global Climate Change at the federal, State, and local level.

Federal Regulations

The United States has historically had a voluntary approach to reducing greenhouse gas emissions. However, on April 2, 2007, the United States Supreme Court ruled that the USEPA has the authority to regulate CO_2 emissions under the federal Clean Air Act. While there currently are no adopted federal regulations for the control or reduction of greenhouse gas emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 USEPA final rule for mandatory reporting of greenhouse gases from large greenhouse gas emission sources in the United States. Additionally, the USEPA Administrator signed an endangerment finding action in 2009 under the Clean Air Act, finding that six greenhouse gases (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national greenhouse gas emission standards.

State Regulations

The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002). In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 was enacted on July 22, 2002. AB 1493 requires the CARB to set greenhouse gas emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of CAA Preemption was not granted by the USEPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025.

Executive Order S-3-05 (2005). Governor Arnold Schwarzenegger signed Executive Order S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's greenhouse gas emissions reduction targets, which established the following goals:

- Greenhouse gas emissions should be reduced to 2000 levels by 2010;
- Greenhouse gas emissions should be reduced to 1990 levels by 2020; and
- Greenhouse gas emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce greenhouse gases. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward greenhouse emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads this Climate Action Team (CAT) made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide greenhouse gas targets that were established in the executive order and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and the Legislature was released in March 2006, which it laid out 46 specific emission reduction strategies for reducing greenhouse gas emissions and reaching the targets established in the Executive Order. The CAT Report to the Governor and Legislature; the most recent was released in December 2010.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing greenhouse gas emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing greenhouse gas emissions to 1990 levels by 2020. The CARB has established

the level of greenhouse gas emissions in 1990 at 427 million metric tons (MMT) of CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce greenhouse gases that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT of CO_2e, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended greenhouse gas reductions for each emissions sector of the State's greenhouse gas inventory. The Scoping Plan calls for the largest reductions in greenhouse gas emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related greenhouse gas targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

CARB has not yet determined what amount of greenhouse gas reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's greenhouse gas reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, CARB is also developing an additional protocol for community emissions). CARB further acknowledges that decisions on how land is used will have large impacts on the greenhouse gas emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate greenhouse gas reduction assignment to local government operations is to be determined. With

regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO_2e reduction due to implementation of Senate Bill 375 (SB 375).

In addition to reducing greenhouse gas emissions to 1990 levels by 2020, AB 32 directed the CARB and the CAT to identify a list of "discrete early action greenhouse gas reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing greenhouse gases by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the CARB to consider the Low Carbon Fuel Standard as a discrete early action measure. In 2011, U.S. District Court Judge Lawrence O'Neil issued an injunction preventing implementation of the Low Carbon Fuel Standard, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeal stayed the District Court's injunction, allowing implementation of the Low Carbon Fuel Standard. The Ninth Circuit decided to uphold the Low Carbon Fuel Standard.

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[1] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide greenhouse gas emissions by nearly 16 MMT.[2]

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive greenhouse gas emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 greenhouse gas emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" greenhouse gas reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[3] to reflect the 2030 target set by Executive Order B-30-15 and codified by Senate Bill 32 (SB 32).

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent

1 California Air Resources Board. 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

2 California Air Resources Board. 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

3 California Air Resources Board. 2017. *California's 2017 Climate Change Scoping Plan*. November.

environmental issue that requires analysis under CEQA. This bill directed the OPR to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the CEQA Guidelines in November 2018, which went into effect in December 2018. The amendments do not identify a threshold of significance for greenhouse gas emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008). SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organization (MPOs); the targets require a 6 to 15 percent reduction by 2020 and between 13 to 19 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs such as the Southern California Association of Governments (SCAG) will work with local jurisdictions in the development of Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the SCAG reduction targets for per capita vehicular emissions are 8 percent by 2020 and 13 percent by 2035 as shown in Table D.

Table D: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (percent)	By 2035 (percent)
San Francisco Bay Area	10	19
San Diego	15	19
Sacramento	7	19
Central Valley/San Joaquin	6-13	13-16
Los Angeles/Southern California	8	19

Source: California Air Resources Board (2018).

Executive Order B-30-15 (2015). Governor Jerry Brown signed Executive Order B-30-15 on April 29, 2015, which added the immediate target of:

- Greenhouse gas emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of greenhouse gas emissions were directed to implement measures to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act. Senate Bill 350 (SB 350) signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission for the private utilities and by the California Energy Commission for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to state energy agencies under existing law. The addition made by this legislation requires state energy agencies to plan for, and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197. In summer 2016 the Legislature passed, and the Governor signed, SB 32, and Assembly Bill 197 (AB 197). SB 32 affirms the importance of addressing climate change by codifying into statute the greenhouse gas emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 Executive Order B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change (IPCC) analysis of the emissions trajectory that would stabilize atmospheric greenhouse gas concentrations at 450 parts per million CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce greenhouse gas emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18. Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Building Standards Code and CALGreen Code. In November 2008, the California Building Standards Commission established the California Green Building Standards (CALGreen) Code, which sets performance standards for residential and nonresidential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2016 to include new mandatory measures for residential as well as nonresidential uses; the new measures took effect on January 1, 2017.

Cap and Trade. The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. The cap-and-trade emissions trading program developed by CARB took effect on January 1, 2012, with enforceable compliance obligations beginning January 1, 2013. The cap-and-trade program aims to regulate GHG emissions from the largest producers in the State by setting a statewide firm limit, or cap, on allowable annual GHG emissions. The cap was set in 2013 at approximately 2 percent below the emissions forecast for 2020. In 2014, the cap declined approximately 2 percent. Beginning in 2015 and continuing through 2020, the cap has been declining approximately 3 percent annually. CARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities. On January 1, 2015, compliance obligation began for distributors of transportation fuels, natural gas, and other fuels. California is working closely with British Columbia, Ontario, Quebec, and Manitoba through the Western Climate Initiative to develop harmonized cap-and-trade programs that will deliver cost-effective emission reductions. Two lawsuits have been filed against cap-and-trade, but the cap-and-trade program will be implemented as is until further notice.[1]

SETTING

Attainment Status

The CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for all State standards. An *attainment* designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A *nonattainment* designation indicates

[1] CARB. 2014. Cap and Trade Program. Website: http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed March 2019).

that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An *unclassified* designation signifies that data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA designates areas for O_3, CO, and NO_2 as either does not meet the primary standards, or cannot be classified, or better than national standards. For SO_2, areas are designated as does not meet the primary standards, does not meet the secondary standards, cannot be classified, or better than national standards.

Table E provides a summary of the attainment status for the Basin with respect to NAAQS and CAAQS.

Table E: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1 hour	Nonattainment	Extreme Nonattainment
O_3 8 hour	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Serious Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	N/A	Attainment/Unclassified
Lead	Attainment	Attainment[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: South Coast Air Quality Management District (2018).
Notes:
[1] Except in Los Angeles County.
CARB = California Air Resources Board
CO = carbon monoxide
N/A = not applicable
NO2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SO_2 = sulfur dioxide

Existing Climate and Air Quality

Air quality in Long Beach is affected by various emission sources (e.g., mobile and industry) as well as atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin some of the highest pollutant concentrations in the country.

The annual average temperature varies throughout the Basin, ranging from the low- to middle-60s, measured in °F. With a more pronounced oceanic influence, coastal areas, including the City of Long Beach, show less variability in annual minimum and maximum temperatures than inland areas. The monthly average maximum temperature in Long Beach ranges from 65.2°F in January to 80.7°F in August. The monthly average minimum temperature ranges from 44.8°F in January to 62.1°F in

August.[1] January is typically the coldest month, and July and August are typically the warmest months in this area of the Basin.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thunderstorms in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The monthly average rainfall in Long Beach typically varies from 2.88 inches in January to 0.03 inch in August with an annual total of 12.72 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high, which is the semi-permanent high-pressure area of the north Pacific Ocean and is the dominating factor in California weather. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid-afternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in Long Beach blow predominantly from the west–northwest, with relatively low velocities.[2] Wind speeds in Long Beach average between 7 miles per hour (mph) and 4 mph. Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months and disperse air contaminants. The Santa Ana conditions tend to last for several days at a time.[3]

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollution concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and NO_X because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog or ozone.

Air Quality Monitoring Results

Air quality monitoring stations are located throughout the nation and are maintained by the local air pollution control district and State air quality regulating agencies. The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring

1 Western Regional Climate Center, 2015.
2 Ibid.
3 Ibid.

station closest to and within the project area is the 2425 Webster Street ambient air quality monitoring station in Long Beach, because it monitors the most air pollutant data in the City. The air quality trends from this station are used to represent the ambient air quality in Long Beach.

Pollutant monitoring results for the years 2015 to 2017 at the 2425 Webster Street ambient air quality monitoring station in Long Beach, shown in Table F, indicate that air quality in the vicinity of the City has generally been good. As indicated in the monitoring results, no violations of the federal PM_{10} standard occurred during the 3-year period. The State PM_{10} standard was exceeded six times in 2015, eight times in 2016, and 10 times in 2017. $PM_{2.5}$ levels exceeded the Federal standard three times in 2015 and four times in 2017. Neither State nor Federal 1-hour ozone standards nor the State 8-hour ozone standard were exceeded in the 3-year period. In addition, the CO, SO_2, and NO_2 standards were also not exceeded in this area during the 3-year period.

Existing Setting

The City is mostly developed, consisting of a mix of residential, commercial, medical, institutional, industrial, and open space and recreation uses. These uses currently generate criteria air pollutants from natural gas use for energy, heating and cooking, vehicle trips associated with each land use, and area sources such as landscaping equipment and consumer cleaning products.

Existing City of Long Beach Criteria Air Pollutant Emissions Inventory

Table G identifies the existing criteria air pollutant emissions inventory of the City of Long Beach using emission rates for year 2018 (existing conditions). The inventory is based on demographics in the City. The year 2018 inventory represents the estimated emissions generated by the existing land uses using the baseline year 2018 emission factors for on-road vehicles, energy sources, and area sources. Area emissions refer to emissions occurring from hearths, consumer products, area architectural coatings, and landscaping equipment. Energy use emissions refer to emissions occurring from building electricity and non-hearth natural gas usage.

Multiple Air Toxics Exposure Study IV

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and estimated the potential health risks from air toxics in the Basin. The MATES was aimed at estimating the cancer risk from toxic air pollutant emissions throughout the Basin by conducting a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize health risks for those living in the Basin. In 2008, the SCAQMD conducted its third update to the MATES (MATES III). The study concluded that the average carcinogenic risk from air pollution in the Basin is approximately 1,200 in one million. Mobile sources (e.g., cars, trucks, trains, ships, and aircraft) represent the greatest contributors. Approximately 85 percent of the risk is attributed to diesel particulate emissions, approximately 10 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde), and approximately 5 percent of all carcinogenic risk is attributed to stationary sources (which include industries and other businesses, such as dry cleaners and chrome plating operations).

Table F: Ambient Air Quality at the Long Beach 2425 Webster Street Monitoring Station

Pollutant	Standard	2015	2016	2017
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		3.3	3.3	3.9
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		2.2	2.2	2.6
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.087	0.079	0.082
Number of days exceeded:	State: > 0.09 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.067	0.059	0.069
Number of days exceeded:	State: > 0.07 ppm	0	0	0
	Federal: > 0.08 ppm	0	0	0
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration (µg/m^3)		80.0	75.3	79.3
Number of days exceeded:	State: > 50 µg/m^3	6	8	10
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		31.5	31.9	33.9
Exceeded for the year:	State: > 20 µg/m^3	Yes	Yes	Yes
	Federal: > 50 µg/m^3	No	No	No
Fine Particulates ($PM_{2.5}$)[1]				
Maximum 24-hour concentration (µg/m^3)		54.6	29.3	55.3
Number of days exceeded:	Federal: > 35 µg/m^3	3	0	4
Annual arithmetic average concentration (µg/m^3)		10.8	10.3	10.9
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 12 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.102	0.076	0.090
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.020	0.018	0.018
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration (ppm)		0.038	0.018	0.020
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.50 ppm	ND	ND	ND
Maximum 24-hour concentration (ppm)		0.005	0.004	0.003
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.0009	0.0003	0.0009
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Source: CARB, 2018 and USEPA, 2018.
[1] Data taken from the 3648 Long Beach Boulevard monitoring site.
ppm = parts per million
µg/m^3 = micrograms per cubic meter;
ND = No data. There was insufficient (or no) data to determine the value.

Table G: Existing City of Long Beach Regional Criteria Air Pollutant Emissions Inventory

Sector	Criteria Air Pollutant Emissions (lbs/day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Existing Year 2018						
Transportation (2018 emission factors)[1]	4,123	38,622	8,474	85	1,827	541
Energy: Residential[2]	83	838	357	7	58	58
Energy: Commercial + Industrial[2]	24	106	89	1	7	7
Energy: Public Facilities/Institutional[2]	7	65	55	0	5	5
Area Source: Residential[3]	8,837	2,990	46,580	82	5,478	5,478
Area Source: Commercial + Industrial[3]	952	1	1	0	1	1
Area Source: Public Facilities/Institutional[3]	295	0	1	0	0	0
Total Emissions for Existing Land Uses	**14,321**	**42,621**	**55,556**	**174**	**7,377**	**6,091**

Source: Compiled by LSA (March 2019).
Notes:
1 EMFAC2017 based on daily vehicle miles traveled (VMT) provided by LSA Associates, Inc.
2 Energy use calculated using CalEEMod version 2016.3.2
3 Estimated using CalEEMod version 2016.3.2. Area source emissions include landscaping and consumer product emissions. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the Land Use Element would require permitting and would be subject to further study pursuant to SCAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time and are subject to further regulation and permitting, they are not considered for purposes of this analysis.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SO_X = sulfur oxides
VOC = volatile organic compound

In May 2015, the SCAQMD released the final report of the fourth update (MATES IV). The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the previous update released in 2008 (MATES III), the monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources while 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, accounting for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basin-wide population-weighted risk decreased by approximately 57 percent compared to the analysis done for the MATES III time period. For Los Angeles County, MATES III's estimated population-weighted average risk was 951 per million while MATES IV's estimated population-weighted average risk was 415 per million (SCAQMD 2015a). In the project vicinity of Long Beach, the MATES IV interactive map identifies risk to range from 1,150 per million to 2,235 per million.[1]It should be noted that the Office of Environmental Health Hazard Assessment (OEHHA) has updated the methods for estimating cancer risks. The new method includes utilizing higher estimates of cancer potency during early life exposures. There are also differences in the

[1] South Coast Air Quality Management District (SCAQMD), 2015. *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV) Interactive Map*. Website: http://www3.aqmd.gov/webappl/OI.Web/OI.aspx?jurisdictionID=AQMD.gov&shareID=73f55d6b-82cc-4c41-b779-4c48c9a8b15b (accessed March 2019).

assumptions on breathing rates and length of residential exposures. When combined, the SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher using the proposed updated methods identified in MATES IV.[1]

The SCAQMD is in the process of preparing the MATES V, which includes a fixed site monitoring program with ten stations, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the Basin. MATES V focuses on the carcinogenic risk from exposure to air toxics but does not estimate mortality or other health effects from particulate exposures. The purpose of the MATES V fixed site monitoring is to characterize long-term regional air toxics levels in residential and commercial areas. To complement and enhance the fixed site monitoring, MATES V efforts will include advanced state-of-the-art monitoring technologies, low-cost sensor networks, and near real-time data and community engagement to conduct enhanced air toxics monitoring at local scales with a focus on EJ communities, especially those near refineries.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others are, due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time.

METHODOLOGY AND THRESHOLDS

Methodology

A number of modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality analysis. SCAQMD's current guidelines, *CEQA Air Quality Handbook,* (SCAQMD 1993) were followed in the assessment of air quality impacts for the proposed project. The air quality models identified in the document (including an older version of the URBEMIS model) are outdated; therefore, the current reference materials in CalEEMod Version 2016.3.2 model are used to estimate project-related mobile and stationary sources emissions. CalEEMod was developed by the California Air Pollution Control Officers Association for use in estimating emissions from land use

[1] South Coast Air Quality Management District (SCAQMD), 2015. *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV) Interactive Map*. Website: http://www3.aqmd.gov/webappl/OI.Web/OI.aspx?jurisdictionID=AQMD.gov&shareID=73f55d6b-82cc-4c41-b779-4c48c9a8b15b (accessed March 2019).

development projects. This AQIA includes estimated emissions associated with implementation of the project. Criteria pollutants with regional impacts would be emitted by increased vehicle trips, as well as by emissions associated with area sources. Localized air quality impacts, such as higher CO concentrations (CO hot spots) near intersections or roadway segments affected by future development facilitated by approval of the proposed project, would be small and less than significant due to the generally low ambient CO concentrations.

The net increase in pollutant emissions determines the significance and impact on regional air quality as a result of implementation of the proposed project. The results also allow the local government to determine whether the new development that would occur with implementation of the proposed project would deter the region from achieving the goal of reducing pollutants in accordance with the AQMP in order to comply with NAAQS and CAAQS.

Operational Criteria Pollutant Emissions

This AQIA includes an estimate of emissions associated with long-term operation of the development projects that would occur with implementation of the proposed project. Criteria pollutants with regional impacts would be emitted by mobile (indirect) sources and area sources. Utilizing guidance from the SCAQMD for estimating emissions associated with land use development projects, emission factors, inventory data information, and references from CalEEMod were used to calculate the long-term operational emissions associated with implementation of the project. The criteria air pollutant emissions inventory includes the following sectors:

- **Transportation:** Transportation emissions forecasts were modeled for vehicle trips beginning and ending within the City of Long Beach and from external/internal vehicle trips (i.e., trips that either begin or end within the City) using the CARB's EMFAC2017. The estimated Citywide traffic from the proposed project was addressed in the TIA prepared for the project (LSA 2019).
    - Based on the TIA, the existing 2018 Citywide VMT is approximately 9.48 million VMT. These trips are associated with the existing residential development, commercial facilities, industrial facilities, and public facilities/institutional land uses within the City.
    - Under the existing General Plan under future 2040 conditions, VMT is expected to decrease to 8.91 million daily VMT.
    - With implementation of the proposed project, the traffic is estimated to be 9.03 million daily VMT in year 2040 with anticipated buildout including SCAG-projected population and job growth, as well as new housing units both to support population growth and to alleviate overcrowding of existing housing units (such growth is not contemplated under the existing General Plan future 2040 conditions listed above).

  The off-peak VMT is generated by discretionary trips, which the traffic model calculates based on the number of households. In other words, the model assumes that people living in overcrowded housing conditions generate fewer trips to the grocery store than the same number of people living in less-crowded, separate housing. Because the proposed LUE reduces overcrowding compared to existing conditions by providing sufficient housing stock to reduce overcrowding over time, the model estimates that the number of discretionary

trips would increase for residents living in separate units when compared to the number of trips for the same number of people living in one household thereby increasing the off-peak VMT, and subsequently, the total VMT.

The EMFAC2017 emission program was used to estimate emissions associated with the three analysis scenarios. The EMFAC2017 model is the latest version of the emission factor model for on-road traffic. Emission factors representing the vehicle mix for 2018 and 2040 for Los Angeles County were used to estimate emissions. Based on the results of the EMFAC2017 model for subsequent years, emissions would decrease on an annual basis from 2018 onward due to phase out of higher polluting vehicles and implementation of more stringent emission standards that are taken into account in the EMFAC2017 model.

- **Energy and Area Source Emissions:** Non-hearth natural gas use and building electricity for residential and nonresidential land uses in the City was modeled using CalEEMod. The electricity energy use used in the analysis is based on units of kilowatt hours (kWh) per size metric for each land use subtype. The natural gas use used in the analysis is based on units of a thousand British Thermal Units (kBTU) per size metric for each land use subtype.[1] Water use and wastewater generation used in the analysis are based on units of million gallons (Mgal) per size metric for each land use subtype. In addition, solid waste generation used in the analysis is based on the unit of tons per size metric for each land use subtype.

  The total number of units (or 1,000 square foot [ksf]) for each General Plan LUE and UDE land use type were divided by the units per acre (or ksf per acre), then multiplied by the following energy metrics: (a) units of kWh per size metric for each land use subtype for electricity, (b) units of kBTU per size metric for each land use subtype for natural gas consumption, (c) Mgal of water per size metric for each land use subtype for water consumption, (d) Mgal of wastewater per size metric for each land use subtype for wastewater generation, and (e) tons of solid waste per size metric for each land use subtype for solid waste generation.

  CalEEMod was used to estimate criteria air pollutant emissions from consumer products, area architectural coatings, landscaping equipment and light commercial equipment in the City.

Greenhouse Gas Emissions

Greenhouse gas emissions associated with implementation of the proposed project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be minimal long-term greenhouse gas emissions associated with project-related vehicular trips. Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the planning area. The GHG emissions inventory includes the following sectors:

[1] The electricity and natural gas usage factors were modeled by land use type to the equivalent of 1 acre (e.g., three single-family dwelling units per acre, 16 low-rise apartment units per acre, 38 mid-rise apartment units per acre, and 43,560 square feet of commercial land use per acre).

- **Transportation:** On-road mobile sources, including Citywide vehicle trips to and from land use development projects, and pass through traffic on freeways and arterials will result primarily in emissions of CO_2, with minor emissions of CH_4 and N_2O. Citywide, VMT per capita is anticipated to decline in the future as a result of previous planning efforts and is anticipated to decline further due to the elements of the 2016 SCAG RTP/SCS. The traffic analysis prepared for the project indicates VMT in Long Beach would be reduced from 9,482,252 VMT per day in the existing condition to 9,028,327 VMT with the proposed LUE/UDE (a 9 percent decrease). However, VMT during off-peak times would increase slightly with the LUE as compared to the existing LUE for the horizon year. These off-peak VMT are generated by discretionary trips, which the traffic model calculates based on the number of households. In other words, the model assumes that people living in overcrowded housing conditions generate fewer trips to the grocery store than the same number of people living in less-crowded, separate housing. Because the LUE reduces overcrowding compared to the previous land use distribution, the number of discretionary trips would increase thereby increasing the off-peak VMT, and subsequently, the total VMT for the horizon year compared to the no project 2040 scenario. The existing VMT per household is 56.9 per day, which is anticipated to decline in the future to 49.9 VMT per day under the no project scenario. The efficiency of the distribution of land uses in the LUE would reduce this further to 46.1 VMT per day per household (a 19 percent decrease from existing conditions).
- **Energy:** The most significant GHG emission from natural gas usage will be CH_4. Electricity usage by future land use developments will result primarily in emissions of CO_2.
- **Waste:** Disposal of solid waste will result in emissions of CH_4 from the decomposition of waste at landfills coupled with CO_2 emission from the handling and transport of solid waste.
- **Water/Wastewater:** Indirect usage of electricity for water and wastewater conveyance will result primarily in emissions of CO_2.
- **Area Sources:** The future use of hearths, consumer products, area architectural coatings, landscaping equipment and light commercial equipment will result primarily in emissions of CO_2, with minor emissions of CH_4 and N_2O. **Industrial sources of emissions that require a permit from the SCAQMD are not included in the City's emissions inventory**: Life-cycle emissions are also not included in this analysis because not enough information is available for the proposed project and therefore they would be too speculative.

Thresholds of Significance for Air Quality

Based on *Guidelines for the Implementation of California Environmental Quality Act*, Appendix G, PRC Sections 15000–15387, a project would normally be considered to have a significant effect on air quality if the project would violate any AAQS, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutant concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

In addition to the NAAQS and CAAQS, there are daily emissions thresholds for construction and operation of a proposed project in the Basin. The Basin is administered by the SCAQMD, and guidelines and emissions thresholds established by the SCAQMD in its *CEQA Air Quality Handbook* are used in this analysis. Emission thresholds were established based on the attainment status of the

Basin with regard to air quality standards for specific criteria pollutants. The attainment concentration standards were set at a level that protects public health with an adequate margin of safety; therefore, the emission thresholds are regarded as conservative in determining an individual project's contribution to health risks.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

AQ-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

CEQA generally does not require analysis or mitigation of the impact of existing environmental conditions on a project, including a project's future users or residents. However, as with other laws and regulations enforced by other agencies that protect public health and safety, the City, as the lead agency, has authority other than CEQA to institute policies that aim to protect public health and safety. Policies that aim to address the impact of existing environmental conditions on future projects have been included in the LUE plan and will be implemented on a case-by-case basis through the discretionary review process.

South Coast Air Quality Management District Thresholds

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's "CEQA Air Quality Handbook" and the significance thresholds on SCAQMD's website.[1] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. The SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation.

Regional Significance Thresholds

The SCAQMD has adopted regional construction and operational daily emissions thresholds to determine a project's daily and cumulative impact on air quality in the Basin. Specifically, these thresholds gauge whether a project would significantly contribute to a nonattainment designation based on the mass emissions generated. Table H lists the SCAQMD regional significance thresholds.

[1] SCAQMD's Air Quality Significance Thresholds are current as of March 2015 and can be found at http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

Table H: South Coast Air Quality Management District Construction and Operational Significance Thresholds

Air Pollutant	Construction Phase (lbs/day)	Operational Phase (lbs/day)
VOCs	75	55
CO	550	550
NO_X	100	55
SO_X	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55

Source: SCAQMD (2015c).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ROCs = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the State 1-hour standard of 20 parts per million (ppm) or the 8-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse without improvements.[1]

Health Risk Thresholds

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401, placed on the CARB air toxics list pursuant to AB 1807, or placed on the USEPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. Table I lists the SCAQMD's TAC incremental risk thresholds for operation of a project. Residential, commercial, and office uses do not use substantial quantities of TACs, so these thresholds are typically applied to new industrial projects. Although not officially adopted by the SCAQMD, these thresholds are also commonly used to determine air quality land use compatibility of a project with major sources of TACs within 1,000 ft of a proposed project.

Table I: SCAQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Cancer Burden (in areas ≥ 1 in 1 million)	> 0.5 excess cancer cases
Hazard Index (project increment)	≥ 1.0

Source: SCAQMD (2015b).
SCAQMD = South Coast Air Quality Management District

[1] California Department of Transportation (Caltrans). 1997, December. Transportation Project-Level Carbon Monoxide Protocol. UCD-ITS-RR-97-21. Prepared by the Institute of Transportation Studies, University of California, Davis.

Thresholds for Localized Significance

SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003, recommending that all project-level air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. For this plan level programmatic document, it is not possible to determine whether the scale and phasing of future individual projects under the LUE/UDE would result in the exceedance of the localized emissions thresholds and contribute to known health effects. Therefore, in accordance with the SCAQMD methodology, localized significance thresholds (LSTs) analysis can only be conducted at a project level and quantification of LSTs is not applicable for this program-level environmental analysis.

Thresholds of Significance for Greenhouse Gas Emissions

CEQA Guidelines for GHG

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment related to GHG if it would:

GHG-1 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

For purposes of this analysis, as the horizon year for the proposed project is 2040, the per service population emissions rate is evaluated to a year 2040 efficiency target. As part of the City's CAAP, although not yet adopted, a GHG Emission Reduction Target Options Memo was prepared in August 2018 and was updated in May 2019 based on more recent data and direction from the Long Beach Mayor and City Council (see Appendix B). The GHG Emission Reductions Target Options Memo provides the supporting documentation needed as substantial evidence to support the use of the identified targets for significance analysis of a GHG threshold. The Memo identifies three target options that could be used for the CAAP. Although another target option may be formally adopted, target Option D "Local Emissions Source-Based Intensity Targets", has been identified by the City and its CAAP Scientific Working Group as the preferable target because it represents per capita and per service population[1] emissions efficiency targets for Long Beach based on the sub-set of statewide emissions sectors that are included in City's CAAP GHG emissions inventory. This target aligns with the most current guidance from the California Air Resources Board (CARB) and the Governor's Office of Planning and Research (OPR) in how it is tailored to match the emissions sectors included locally in the City's inventory. Target Option D consists of a 2040 per capita efficiency target of 2.79 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per capita (or MT CO_2e/yr/capita); or expressed another way, 1.92 MT of CO_2e per year per service population (or MT CO_2e/yr/SP). Consistent with the CAAP, this efficiency target will be used for purposes of determining project significance. This metric is appropriate in that it would achieve per capita

[1] "Per capita" refers to total citywide emissions divided by the total number of residents in the City. "Per service population" refers to total citywide emissions divided by the number of employees and the number of residents in the planning area.

emissions that go beyond the State's reduction goals, and would be consistent with the requirements of the Global Covenant of Mayors.

The total GHG emissions associated with the 2040 With Project Scenario can be divided by the total service population associated with the anticipated General Plan build out to determine whether the proposed project would result in a significant GHG impact.

Consistency with the Statewide GHG Reduction Targets

The per service population efficiency targets are based on the 2040 reduction targets established for the CAAP and are consistent with the State's target reductions of 40 percent below 1990 levels by 2030 and the State's 2050 GHG target.[1] The following threshold is the applicable GHG threshold for the proposed project: 2040 GHG efficiency target of 1.92 MT CO_2e/yr/SP if the community GHG emissions exceed this per service population efficiency target, GHG emissions would be considered potentially significant in the absence of mitigation measures.

IMPACTS, COMPLIANCE MEASURES, AND MITIGATION MEASURES

This section identifies the air quality and GHG impacts associated with implementation of the proposed project. This section also identifies compliance measures and mitigation measures that would be required by the project.

Air Quality Impacts

This air quality evaluation was prepared in accordance with CEQA requirements to determine if significant air quality impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project.

It is noted that the SCAQMD thresholds for operational emissions are designed for analysis of individual development projects, not for a long-range planning program such as the proposed project, which will be implemented over a long period of time (i.e., 20 years or more) and covers the entire City. In order to quantify the level of emissions associated with individual development projects, specific information regarding the size and type of development and the location of receptors would be needed. Emissions associated with the operation of individual projects, depending on project type and size, could exceed project-specific thresholds established by the SCAQMD.

The following impact analysis addresses project related impacts. The applicable thresholds are identified in brackets after the impact statement.

[1] AECOM, 2019. City of Long Beach Climate Action Adaptation Plan GHG Emissions Reduction Target Options Memo #2 – 2045 Carbon Neutrality. May.

Impact No. 1: The proposed project would be consistent with the SCAQMD Air Quality Management Plan as the anticipated General Plan build out scenario (year 2040) would match the 2016 SCAG population and employment estimates. [Threshold AQ-1]

Clean Air Plan Impact Analysis

CEQA requires that general plans be evaluated for consistency with the AQMP. A consistency determination plays an important role in local-agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental effects of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean-air goals in the AQMP. Projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan. There are two key indicators of consistency:

- **Indicator 1:** Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the AAQS or emission reductions in the AQMP.
- **Indicator 2:** Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

Indicator 1: The proposed project involves long-term growth associated with anticipated build out of the City and therefore, emissions of criteria pollutants associated with future development anticipated under the project could contribute emissions of PM_{10}, $PM_{2.5}$, NO_X, and VOCs, which could affect attainment of the AAQS. Future development facilitated under the proposed project would be required to comply with CARB motor vehicle standards, SCAQMD regulations for stationary sources and architectural coatings, Title 24 energy efficiency standards, and the proposed LUE/UDE goals and policies. Additionally, future projects would be required to comply with existing City policies and regulations, as well as the proposed LUE/UDE goals and policies, in order to further reduce air quality impacts.

As noted above, citywide VMT per capita is anticipated to decline in the future as a result of previous planning efforts and is anticipated to decline further due to the elements of the 2016 SCAG RTP/SCS. The traffic analysis prepared for the project indicates VMT in Long Beach will be reduced from 9,482,252 per day in the existing condition to 9,028,327 with the proposed project (a 9 percent decrease). However, VMT during off-peak times increases slightly in the horizon year with the LUE as compared to the existing LUE. These off-peak VMT are generated by discretionary trips, which the traffic model calculates based on the number of households. In other words, the model assumes that people living in overcrowded housing conditions generate fewer trips to the grocery store than the same number of people living in less-crowded, separate housing. Because the proposed LUE reduces overcrowding compared to existing conditions by providing sufficient housing stock to reduce overcrowding over time, the number of discretionary trips would increase for residents living in separate units compared to the number of trips for the same number of people living in one household (the model again assumes that people living in overcrowded conditions take discretionary trips together whereas that same number of people in separate units, the model

assumes, would take separate trips) thereby increasing the off-peak VMT, and subsequently, the total VMT. In terms of household VMT, the existing VMT per household is 56.9 per day, which is anticipated to decline in the future to 49.9 per day in 2040 without the Land Use Element. The efficiency of the distribution of land uses in the Land Use Element would reduce household VMT further to 46.1 VMT per day per household (a 19-percent decrease from existing conditions).

The State of California has concurrent goals of reducing VMT and increasing housing supply to improve affordability and reduce overcrowding. The proposed project would increase the number of housing units to reduce overcrowding in Long Beach. The efficiency of the location of land uses in the LUE (i.e., infill development policies and sites) results in a 19 percent decrease in VMT per household compared to existing conditions. Other measures of VMT, including per capita and absolute terms, decline as well compared to existing conditions. With the proposed project, VMT per capita in Long Beach remains lower than the region as a whole and lower than Los Angeles County. The City believes that the proposed General Plan strikes the appropriate balance between the State's concurrent goals of reducing VMT and increasing housing supply.

Based on the emissions modeling prepared for the project (refer to Table L), emissions under future with project conditions would exceed SCAQMD thresholds for VOC and CO as a result of additional housing anticipated under the proposed project. Therefore, the proposed project would result in a potentially significant impact associated with consistency with the applicable AQMP, and would not be consistent with the AQMP under the first indicator.

Indicator 2: The land-use designations in the City's existing LUE form, in part, the foundation for the emissions inventory for the Basin in the AQMP. The AQMP is based on projections in population, employment, and VMT in the Basin projected by SCAG. SCAG projections for the City LUE and UDE proposed land uses are partially based on the current adopted General Plan. Implementation of the proposed General Plan LUE and UDE would not result in higher population and would not generate employment for the City compared to SCAG forecasts. The proposed project accommodates growth that was estimated based on SCAG projections for population and housing units in the City. As noted, the additional units would serve the existing population that is currently in overcrowded housing and the LUE simply focuses that projected growth near transit. These demographic trends are incorporated into the RTP/SCS compiled by SCAG to determine priority transportation projects and VMT in the SCAG region. Growth projections of the proposed project assume the full anticipated General Plan build out by the year 2040, since there is no schedule for when this development would occur. As a result, the growth projections for the City would be based on SCAG's 2016 RTP/SCS and the associated emissions inventory in SCAQMD's 2016 AQMP. Based on the requirements for consistency with emission control strategies in the AQMP, the project would be consistent with the 2016 AQMP's land use policies aimed at reducing air emissions and would not increase population or employment in the City.

Summary

As described above, although the proposed project would be consistent with the 2016 AQMP because the population is not anticipated to increase with implementation of the project, the additional housing units allowed under the plan would result in VOC and CO emissions that would exceed SCAQMD thresholds. As such, the project would not be consistent with the assumptions in the attainment of the AAQS or emission reductions in the AQMP. The project horizon year 2040 is

designed to accommodate the trend of the current population and employment estimates for the City of Long Beach and would not result in increased population or employment. Instead, the LUE focuses the projected growth near transit and accommodates housing supply based on projected housing need by SCAG combined with documentation in the Assessment of Fair Housing of the need for housing units to address overcrowding. The proposed Land Use Diagram (see Figure 2) would increase density and mixed-use development and would therefore be consistent with regional goals of improving transportation and land-use planning. In addition, the policies of the proposed LUE/UDE would help minimize air pollutant emissions. While the proposed project would be consistent with the 2016 AQMP's land use policies aimed at reducing air emissions and would not increase population or employment in the City, the project would result in additional housing units that would generate VOC and CO emissions above established SCAQMD thresholds. Therefore, based on the requirements for consistency with emission control strategies in the AQMP, the project would conflict with or obstruct the implementation of the AQMP and/or applicable portions of the SIP. This impact would be significant and unavoidable.

Impact No. 2: Construction activities associated with the anticipated General Plan build out scenario (year 2040) would generate short-term emissions that could potentially exceed the SCAQMD's significance thresholds without mitigation incorporated. [Threshold AQ-2]

Construction Impact Analysis

It is important to note that the proposed project is a regulatory document that establishes the framework for growth and development and does not directly result in development projects.

Construction activities associated with development that could occur during implementation of the project would occur through the horizon year 2040, which would cause short-term emissions of criteria air pollutants. The primary source of emissions is the operation of construction equipment. Before development can occur, each discretionary development project is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

During project construction, the primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included above under *Background: Air Pollutants and Health Effects*.

Information regarding specific development projects is not yet known; however, due to the scale of development activity associated with the anticipated General Plan horizon year 2040 scenario, this analysis assumes that 28,528 new dwelling units will be constructed over the approximately 17-year horizon. Therefore, this analysis assumes that on average approximately 1,640 residential units would be constructed throughout the plan area during a 1-year period. During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, building, and other activities.

Site preparation and project construction would involve demolition, grading, paving, and building activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity, local weather conditions, soil moisture, silt content of soil, and wind speed. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction emissions were estimated using CalEEMod and are summarized in Table J. As indicated above, this analysis assumes that on average approximately 1,640 residential units would be constructed within one year. Other specific construction details are not yet known; therefore, default assumptions (e.g., construction fleet activities, Tier 0 construction equipment) from CalEEMod were used. CalEEMod output sheets are included in Appendix A. Results are summarized in Table J below.

Table J: Construction Emissions in Pounds Per Day

Project Construction	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Maximum (pounds per day)	60.5	46.5	70.8	0.2	18.2	6.4
SCAQMD Threshold	75.0	100.0	550.0	150	150.0	55.0
Exceeds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (March 2019).

As shown in Table J, on average, the maximum construction emissions associated with the development activity allowed under the project are not anticipated to exceed the SCAQMD's thresholds for VOC, NO_x, CO, SO_x, $PM_{2.5}$, or PM_{10} emissions. However, because the scale and timing of construction activities has not been determined, maximum daily emissions associated with an individual development project associated with project implementation could be significant.

In addition, as previously discussed, the SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors such as residential land uses in the immediate vicinity of the project site as a result of construction activities. The thresholds are based on standards established by the SCAQMD in the LST Methodology and are measured against construction emissions that occur on a specific project site. These emissions are primarily generated from heavy-duty construction equipment and demolition, grading, and trenching activities. However, the LSTs are applicable to projects at the project-specific level and are not applicable to programmatic documents, such as the LUE/UDE. Construction emissions associated with future individual projects developed under the LUE/UDE, would however, have the potential to cause or contribute to significant localized air quality impacts to nearby residential land uses within the proposed LUE/UDE planning area. Localized construction impacts of future LUE/UDE projects could potentially exceed the LSTs, particularly for construction of areas larger than 5 acres or areas with more intense construction activities. To address this, regulatory measures (e.g., SCAQMD Rule 201 for a permit to operate, Rule 403 for fugitive dust control, Rule 1113 for architectural coatings, Rule 1403 for new source review,

and the CARB's Airborne Toxic Control Measures) are currently in place, and mitigation would be imposed at the project level may include use of special equipment.

It should be noted that the amount of emissions from a project does not necessarily correspond to the concentrations of air pollutants. A dispersion modeling analysis would be necessary to calculate health risk from project implementation. However, since it is not possible to translate the amount of a future specific project's emissions to a particular concentration, it is not possible to calculate the risk factor for a particular health effect at the time of this analysis.

Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Particulate matter can also lead to a variety of health effects in people. These include premature death of people with heart or lung disease, heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Regional emissions of criteria pollutants contribute to these known health effects. The SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals and that they are not exposed to elevated concentrations of criteria pollutants in the Basin. To achieve the health-based standards established by the USEPA, the SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

Although the analysis for this project identifies that construction emissions associated with the project would not exceed the SCAQMD's thresholds for VOC, NO_x, CO, SO_x, $PM_{2.5}$, or PM_{10} emissions, it should be noted that not exceeding the SCAQMD's numeric regional mass daily thresholds does not necessarily correspond to less-than-significant health risk impacts to sensitive receptors. This is because the mass daily thresholds are in pounds per day emitted into the air, whereas health effects are determined based on the concentration of emissions in the air at a particular receptor (e.g., parts per million by volume of air, or micrograms per cubic meter of air). State and federal ambient air quality standards were developed to protect the most susceptible population groups from adverse health effects and were established in terms of parts per million or micrograms per cubic meter for the applicable emissions.

For this reason, the SCAQMD developed the LST Methodology. The LST methodology is based on the maximum amount of emissions that could be generated from a project in order for a project to not cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standard, and are based on the ambient concentrations of the pollutant and the relative distance to the nearest sensitive receptor. However, as noted above, the LSTs are applicable to projects at the project-specific level and are not applicable to this programmatic planning level document. Localized construction impacts of future LUE/UDE projects could potentially exceed the LSTs, particularly for construction of areas larger than 5 acres or areas with more intense construction activities. Therefore, without mitigation, exceedances of the LSTs could have the potential to cause or exacerbate an exceedance of the AAQS. It should be noted that the AAQS are developed and represent levels at which the most susceptible persons (children and the elderly) are protected. Therefore, the ambient air quality standards are purposefully set low to protect children, elderly, and those with existing respiratory problems.

However, the SCAQMD acknowledges that they have only been able to correlate potential health outcomes for very large emissions sources; specifically, 6,620 pounds per day of NO_x and 89,180

pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to ozone.[1] It is not expected that any future LUE/UDE projects would generate 6,620 pounds per day of NO_x or 89,180 pounds per day of VOC emissions. As identified in Table J above, based on the scale of development associated with the anticipated General Plan build out scenario (year 2040), construction projects would generate an average maximum of 46.5 pounds per day of NO_x and 60.5 pounds per day of VOC.

Therefore, emissions associated with future LUE/UDE projects are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

Current scientific, technological, and modeling limitations prevent the relation of expected adverse air quality impacts to likely health consequences. For this reason, this discussion explains why it is not feasible to provide such an analysis. However, individual projects would still be required to conduct a site-specific localized impact analysis that evaluates potential project health impacts at a project level to immediately adjacent land uses.

The proposed LUE/UDE includes goals regarding land use development and identifies policies designed to reduce emissions of criteria pollutants while protecting public health. These policies include requirements for new development design and construction methods to minimize impacts to air quality; encourage future development to reduce vehicular trips by utilizing compact regional and community-level development patterns; encourage new development to reduce air pollution by incorporating a mixture of uses within the City that encourage people to walk, bicycle, or use public transit; minimize land use conflicts that expose people to significant amounts of air pollution; support transportation management programs that reduce the use of single-occupancy vehicles; and encourage the use of low-emission vehicles and equipment to improve air quality and reduce GHG emissions. While existing City policies and regulations and proposed LUE/UDE goals and policies are intended to minimize impacts associated with nonattainment criteria pollutants, a list of potential Best Management Practices (BMP) and compliance measures are outlined in Compliance Measure CM AQ-1. Compliance with these measures will ensure that the intended environmental protections are achieved. These BMP measures are identified for future project developments that may be implemented under the proposed project that would require environmental evaluation under CEQA. Additionally, Mitigation Measure AQ-1 is identified to require the preparation of project-specific technical assessments evaluating construction-related air quality impacts to further ensure that construction-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. However, as stated above, since the combination, number, and size of projects that could be under construction at any one time are unknown, in an abundance of caution, this impact is considered to be significant and unavoidable.

Impact No. 3: The anticipated General Plan build out scenario (year 2040) would generate long-term emissions that may potentially exceed the SCAQMD's regional significance thresholds that would cumulatively contribute to the nonattainment designations of the Basin. [Threshold AQ-2]

[1] Supreme Court of California, 2015. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno, Plaintiffs and Appellants, v. County of Fresno, Defendant and Despondent, and Friant Ranch, L.P., Real Part in Interest and Despondent.* April.

Regional Emissions Impact Analysis

It is important to note that the proposed project is a regulatory document that establishes the framework for growth and development and does not directly result in development. Before development can occur, each future discretionary development project would be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

The proposed project guides growth and development within the City of Long Beach by designating land uses in the proposed Land Use Plan and through implementation of its goals and policies.

New development would result in air pollutant emissions in the City and contribute to the overall emissions inventory in the Basin. A discussion of health impacts associated with air pollutant emissions generated by operational activities is included in the *Air Pollutants and Health Effects* discussion above.

City of Long Beach Emissions Inventory. Table K summarizes the emissions inventory for the City in year 2018 (with and without future year 2040 emission factors), year 2040 without the proposed project, and under the proposed project (horizon year 2040). Table L provides a summary of the emissions and a comparison of the various scenarios to the SCAQMD thresholds in order to determine significance. Methodology for the analysis is described in the methodology section above. The analysis findings indicate that implementation of the proposed project would result in an overall decrease in criteria air pollutant emissions as compared to existing conditions (year 2018). This decrease is primarily attributed to the difference in vehicle emissions between existing conditions and future land use development associated with the anticipated General Plan buildout scenario (year 2040), and at the same time, vehicle emissions per mile would also decrease. The scenarios evaluated for this analysis included the following:

- **Existing Conditions 2018.** This scenario is considered the CEQA baseline analysis. Data inputs included existing VMT data modeled with emission factors for 2018, current household units and estimated commercial square footage within the City using current building efficiency standards.
- **Existing Conditions 2018 (with 2040 Emission Factors).** This scenario was evaluated using existing VMT and demographic data, with emission factors and building standards for 2040. Because the future decrease in emissions is associated with the overall decrease in VMT and reduction in vehicle emission rates that would occur with or without the project, this scenario holds the emission factors constant for the year 2040 to account for regulatory changes such as Title 24 building code standards and vehicle fuel efficiency standards. Applying the 2040 emission factors to year 2018 conditions allows the existing conditions scenario, as well as the Proposed Project Anticipated Buildout Year 2040 scenario, to both reflect efficiency standards equally. This is the No Project scenario for purposes of determining CEQA significance.
- **Future Year 2040 No Project.** This scenario evaluated the change in VMT and demographics that would occur under the existing General Plan for the year 2040 conditions. This data is

presented for disclosure purposes only and was not used in the assessment of project impacts under CEQA.

- **Proposed Project Anticipated Build Out Year 2040.** This scenario evaluated the anticipated build out of the proposed project, including 2040 with project VMT data, and reflects the increase in housing units anticipated under the plan.

The SCAQMD regional operational emission thresholds are evaluated based on the total emissions that may result from development that may occur with implementation of the anticipated General Plan build out scenario (year 2040).

Table K: City of Long Beach Regional Criteria Air Pollutant Emissions Inventory

Sector	Criteria Air Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Conditions Year 2018						
Transportation (2018 Emission Factors)[1]	4,123	38,622	8,474	85	1,827	541
Energy: Residential[2]	83	838	357	7	58	58
Energy: Commercial + Industrial[2]	24	106	89	1	7	7
Energy: Public Facilities/Institutional[2]	7	65	55	0	5	5
Area Source: Residential[3]	8,837	2,990	46,580	82	5,478	5,478
Area Source: Commercial + Industrial[3]	952	1	1	0	1	1
Area Source: Public Facilities/Institutional[3]	295	0	1	0	0	0
Total Emissions for Existing Year 2018 Land Uses	**14,321**	**42,621**	**55,556**	**174**	**7,377**	**6,091**
Existing Conditions Year 2018 with Future Year 2040 Emission Factors (CEQA No Project Scenario)						
Transportation (2040 Emission Factors)[1]	1,614	17,538	3,555	34	1,757	136
Energy: Residential[2]	69	838	357	8	49	49
Energy: Commercial + Industrial[2]	11	107	90	1	7	7
Energy: Public Facilities/Institutional[2]	7	65	55	0	5	5
Area Source: Residential[3]	4,859	2,359	12,278	13	211	211
Area Source: Commercial + Industrial[3]	952	1	1	0	1	1
Area Source: Public Facilities/Institutional[3]	295	0	1	0	0	0
Total Emissions for Existing Year 2018 Land Uses with 2040 Emission Factors	**7,808**	**20,908**	**16,337**	**56**	**2,030**	**409**
Future Year 2040 No Project (Provided for Informational Purposes Only)						
Transportation (2040 emission factors)1	1,516	16,473	3,340	32	1,651	127
Energy: Residential 2	72	888	378	8	51	51
Energy: Commercial + Industrial2	30	163	137	1	10	10
Energy: Public Facilities/Institutional2	7	68	57	0	5	5
Area Source: Residential3	5,135	2,524	13,085	13	224	224
Area Source: Commercial + Industrial3	1,219	1	1	0	1	1
Area Source: Public Facilities/Institutional3	307	0	1	0	0	0
Total Emissions for Future Year 2040 Existing General Plan (No Project)	**8,287**	**20,117**	**16,998**	**56**	**1,943**	**420**
Proposed Project Anticipated Buildout Year 2040						
Transportation (2040 emission factors)[1]	1,537	16,698	3,385	33	1,673	129
Energy: Residential [2]	75	954	406	9	53	53
Energy: Commercial + Industrial[2]	30	163	137	1	10	10
Energy: Public Facilities/Institutional[2]	7	68	57	0	5	5
Area Source: Residential[3]	5,493	2,759	14,203	15	242	242
Area Source: Commercial + Industrial[3]	1,219	1	1	0	1	1
Area Source: Public Facilities/Institutional[3]	307	0	1	0	0	0
Total Emissions for Proposed Project Anticipated Buildout Year 2040	**8,668**	**20,644**	**18,190**	**58**	**1,986**	**442**

Source: Compiled by LSA Associates, Inc. (2019).

[1] EMFAC2017 based on daily vehicle miles traveled (VMT) provided by LSA Associates, Inc.

[2] Electricity and Natural gas usage data estimated using CalEEMod version 2016.3.2.

[3] Estimated using CalEEMod. Area source emissions include emissions from consumer products and landscaping. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the Land Use Element would require permitting and would be subject to further study pursuant to SCAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time and are subject to further regulation and permitting, they are not considered for purposes of this analysis.

CARB = California Air Resources Board
CO = carbon monoxide
GHG = greenhouse gas
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound

Table L: City of Long Beach Regional Criteria Air Pollutant Emissions Summary and Comparison

Scenario	Criteria Air Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Total Existing Year 2018	14,321	42,621	55,556	174	7,377	6,091
Total Existing Year 2018 (with Future Year 2040 Emission Factors)	7,808	20,908	16,337	56	2,030	409
Total Future Year 2040 No Project	8,287	20,117	16,998	56	1,943	420
Total Proposed Project Anticipated Buildout Year 2040	8,668	20,644	18,190	58	1,986	442
Project Comparison to Existing Year 2018 Baseline Conditions						
Change in Emissions for Proposed Project Anticipated Buildout Year 2040 from Existing Year 2018	-5,653	-21,977	-37,366	-116	-5,391	-5,649
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
Project Comparison to Future Year 2040 No Project (2040 No Project- For Disclosure Purposes only)						
Change in Emissions for Proposed Project Anticipated Buildout Year 2040 from Future Year 2040 No Project	381	527	1,193	2	43	22
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**
Project Comparison to Baseline Conditions using 2040 Emission Factors (Basis for CEQA Significance Determination)						
Change in Emissions for Proposed Project Anticipated Buildout Year 2040 from Existing Year 2018 (with Future Year 2040 Emission Factors)	860	-264	1,853	2	-44	33
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**Yes**	**No**	**Yes**	**No**	**No**	**No**

Source: Compiled by LSA (2019).

[1] EMFAC2017 based on daily vehicle miles traveled (VMT) provided by LSA.

[2] Electricity and Natural gas usage data estimated using CalEEMod version 2016.3.2.

[3] Estimated using CalEEMod. Area source emissions include emissions from consumer products and landscaping. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the Land Use Element would require permitting and would be subject to further study pursuant to SCAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time and are subject to further regulation and permitting, they are not considered for purposes of this analysis.

CalEEMOD = California Emissions Estimator Model
CARB = California Air Resources Board
CO = carbon monoxide
lbs/day = pounds per day
LUE/UDE = Land Use Element/Urban Design Element
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound

As shown in Table L, emissions associated with the anticipated General Plan build out scenario would not exceed the daily SCAQMD regional thresholds for VOC, NO_X, PM_{10}, and $PM_{2.5}$, and CO in 2040 when compared to the Existing conditions 2018 scenario. However, as noted above, the decrease in emissions is associated with the overall decrease in VMT and reduction in vehicle emission rates that would occur with or without the project. Therefore, an analysis was conducted to evaluate the change in emissions associated with the project holding the emission factors constant for the year 2040 (Existing Conditions 2018 with 2040 Emission Factors). This analysis indicates that VOC (an O_3 precursor emission) and CO emissions would exceed the SCAQMD thresholds under this scenario as a result of the additional housing anticipated to be constructed under the project.

As shown in Table L, regional emissions of VOC and CO associated with anticipated buildout of project implementation would exceed the SCAQMD project level VOC and CO emission thresholds. The scale of individual project level emissions that would result under implementation of the LUE has not been determined. Therefore, in order to present conservative assumptions, the air quality impacts associated with future operation of individual projects that may occur with implementation of the proposed project, when measured against daily regional thresholds, are assumed to be potentially significant. Therefore, Mitigation Measure AQ-2 is identified and requires the preparation of project-specific technical assessments evaluating operational-related air quality impacts to further ensure that operational-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. Despite implementation of Mitigation Measure AQ-2, and in an abundance of caution, the potential regional criteria pollutant emissions impact associated with the operation of the proposed project would remain significant and unavoidable.

Implementation of the proposed LUE policies would help further reduce air pollutant emissions as many of the policies promote an increase in concepts and designs that would increase walking, bicycling, and use of public transit, which would contribute to reduced VMT. The proposed LUE includes the following Strategies and Policies that would result in a reduction in air emissions:

- **Strategy No. 1:** Support sustainable urban development patterns.
  - **LU Policy 1-1:** Promote sustainable development patterns and development intensities that use land efficiently and accommodate and encourage walking.
  - **LU Policy 1-3:** Require sustainable design strategies to be integrated into public and private development projects.
  - **LU Policy 1-4:** Require electric vehicle charging stations to be installed in new commercial, industrial, institutional, and multiple-family residential development projects. Require that all parking for single-unit and two-unit residential development projects be capable of supporting future electric vehicle supply equipment.
  - **LU Policy 1-6:** Require that new building construction incorporate solar panels, vegetated surface, high albedo surface, and/or similar roof structures to reduce net energy usage and reduce the heat island effect.
  - **LU Policy 1-7:** Encourage neighborhood-serving retail, employment, and entertainment destinations in new mixed-use projects to create local, walkable daily trip destinations.
- **Strategy No. 11:** Create healthy and sustainable neighborhoods.
  - **LU Policy 11-2:** Provide for a wide variety of creative, affordable, and sustainable land use solutions to help resolve air, soil, and water pollution, energy consumption, and resource depletion issues.
  - **LU Policy 11-5:** Ensure neighborhoods are accessible to open spaces, parks, trails, and recreational programs that encourage physical activity and walkability.

Future development under the proposed project would also be required to demonstrate compliance with the AQMP, the SIP, the CARB motor vehicle standards, the SCAQMD regulations for stationary sources and architectural coatings, the Title 24 energy efficiency standards, and the proposed LUE/ UDE goals and policies. Because implementation of the proposed project would result in an increase in overall criteria air pollutant emissions from existing conditions (assuming 2040 emission factors s), the cumulative air quality impact associated with the proposed project would be significant. Mitigation is required but would not reduce impacts to a less than significant level.

Construction During Project Operation

It is possible that construction of residential units allowed under the plan would be underway while other units constructed under the plan are operational. Since the project is a programmatic level document and specific projects that would be developed under the plan are unknown at this time, the precise combination of emissions that would occur is unknown. However, as a worst-case scenario, Table M presents the average construction emissions along with the horizon year 2040 project emissions. As shown in Table M, full implementation of the development envisioned under the project, when combined with average daily construction emissions, as identified above, would not exceed the daily emission thresholds. The emission reduction associated with reduced VMT and increased fuel efficiency standard would offset the average annual maximum construction emissions. Combined emissions would be below the significance threshold established by the SCAQMD for daily project emissions.

Table M: Combined Annual Construction and Operational Emissions

Sector	Criteria Air Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Average Maximum Daily Construction Emissions	61	47	71	0	18	6
2040 Net Reduction in Emissions over Existing Conditions	-5,653	-21,977	-37,366	-116	-5,391	-5,649
Total Annual Emissions: Construction and Operation	**-5,592**	**-21,930**	**-37,295**	**-116**	**-5,373**	**-5,643**
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (2019).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound

Impact No. 4: The anticipated General Plan build out scenario (year 2040) may expose sensitive receptors to substantial concentrations of criteria air pollutants and toxic air contaminants. [Threshold AQ-3]

Toxic Air Contaminant Impact Analysis

Various industrial and commercial processes (e.g., manufacturing and dry cleaning) allowed under the proposed project would be expected to release TACs. Industrial land uses, such as chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities, have

the potential to be substantial stationary sources that would require a permit from SCAQMD for emissions of TACs. Emissions of TACs would be controlled through permitting issued by SCAQMD and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under SCAQMD Rule 1401. Since it is not possible to determine the amount of TAC concentrations at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the proposed planning area. The proposed project is a programmatic project and until specific future projects are proposed, the associated TAC emissions cannot be determined or modeled at this time. Future development projects subject to environmental review under CEQA would be required to analyze potential TAC emissions and include mitigation as appropriate.

In addition to stationary/area sources of TACs, commercial and industrial operations could generate a substantial amount of diesel particulate matter emissions from off-road equipment use and truck idling. Diesel particulate matter (DPM) accounts for approximately 84 percent of the excess cancer risk in the Basin.[1] New land uses in the City that use diesel trucks, including trucks with transport refrigeration units, could generate an increase in DPM that would contribute to cancer and noncancer health risk in the Basin. Furthermore, trucks would travel on regional transportation routes throughout the Basin, contributing to near-roadway DPM concentrations. Land use projects are required to comply with AB 2588, SCAQMD Rule 1401, and CARB standards for diesel engines. As stated above, until specific future projects are proposed, the associated emissions cannot be determined or modeled at this time.

It is important to note that the proposed Neo-Industrial Place Type would be used as a buffer between existing industrial and residential neighborhoods. Future industrial developments pursuant to the proposed project are part of larger planning areas designated as Neo-Industrial Place Types with future zoning that would allow a mix of light industrial and commercial uses and residential use limited to adaptive reuse of existing buildings. Specifically, no heavy industrial, warehousing, and distribution facilities are permitted in this land use category near Cherry Boulevard. Instead, the future industrial uses would likely be linked to and serve more of a supporting role to the office land uses. Fulfillment centers or light manufacturing would be allowed; however, this PlaceType is a clean industrial zone.[2] Based on this supportive role and role as a buffer, the industrial uses would likely be below-average truck trip generators. Thus, no future projects or uses that would generate the level of truck trips expected for heavy industrial and/or warehouses are proposed as part of the proposed project. However, since it is not possible to determine the amount of TAC concentrations at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the planning area.

It is important to note that CEQA generally does not require analysis or mitigation of the impact of existing environmental conditions on a project, including a project's future users or residents. However, as with other laws and regulations enforced by other agencies that protect public health and safety, the City, as the lead agency, has authority other than CEQA to institute policies that aim

---

1 South Coast Air Quality Management District (SCAQMD), 2008. *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III)*. September.

2 A clean industrial zone refers to manufacturing and industrial uses that generate minimal waste and air emissions.

to protect public health and safety. Policies that aim to address the impact of existing environmental conditions on future projects have been included in the LUE plan and will be implemented on a case-by-case basis through the discretionary review process.

Future development consistent with the proposed project would not result in significant emissions of diesel particulate matter. Land development projects are required to comply with AB 2588, SCAQMD Rule 1401, and CARB standards for diesel engines. While existing City policies and regulations and proposed LUE/UDE goals and policies are intended to minimize impacts associated with sensitive receptors, specific measures for future project developments that implement these policies and regulations are proposed to ensure that the intended environmental protections are achieved. Compliance with Policy 16-13, and Mitigation Measure MM AQ-3 would ensure that mobile sources of TACs not covered under SCAQMD permits are considered during subsequent project-level environmental review. Policy 16-13 and Mitigation Measure MM AQ-3 would also require the preparation of project-specific technical health risk assessments evaluating operational-related health risk impacts to ensure that operational-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. In addition, Policy 16-14 identifies the use of the discretionary review process for residential and other sensitive land uses near freeways or the Port to impose site plan and design features aimed at minimizing exposure to environmental pollution. Therefore, compliance with Policy 16-13, Policy 16-14, and Mitigation Measure AQ-3 would ensure the potential TAC health risk impact associated with the operation of the proposed project would be less than significant.

The amount of emissions from a project does not necessarily correspond to the concentrations of air pollutants. A dispersion modeling analysis is necessary in order to calculate health risk from project implementation. Because the scale of operational activities has not been determined or estimated and in order to present conservative assumptions, the TAC health risk impacts associated with future operation of individual projects that may occur with implementation of the proposed project are assumed to be potentially significant.

Mitigation Measure MM AQ-3 would require the preparation of project-specific technical health risk assessments for certain discretionary large industrial or warehousing uses to evaluate operational-related health risk impacts to further ensure that operational-related emissions are reduced to a less than significant level. However, information regarding specific development projects is not yet known; therefore, cumulative growth within the City could result in potential TAC health risks exceeding 10 in one million and could cumulatively contribute to elevated health risks in the Basin, as identified in the MATES study. This is therefore considered a cumulatively significant and unavoidable impact.

CO Hot Spots

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Localized air quality effects would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. Vehicular trips associated with the proposed project could contribute to congestion at intersections and along roadway segments in the project vicinity. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly

with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, schoolchildren, the elderly, and hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

At the time that the 1993 Handbook was published, the Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Basin and in the State have steadily declined. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS. As identified within SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the Basin were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. A CO hot spot analysis was conducted at four busy intersections in Los Angeles County at the peak morning and afternoon periods and did not predict a violation of CO standards.[1] Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact. One of the top four worst intersections analyzed for a CO hot spot analysis in Los Angeles County (i.e., Long Beach Boulevard/Imperial Highway)[2] is located approximately 4 miles north of the proposed project. Since the SCAQMD modeled intersections, including this one, do not exceed the CO standards, all intersections within the proposed project with less volume of traffic and under less extreme conditions would not exceed the CO standards. The anticipated General Plan build out scenario (year 2040) would not produce the volume of traffic, as described above, required to generate a CO hot spot. Therefore, implementation of the project would not be expected to result in CO hot spots, and impacts would be less than significant. No mitigation is required.

Impact No. 5: The anticipated General Plan build out scenario (year 2040) may site sensitive land uses in proximity to air pollution sources and may expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-3]

[1] The four intersections were Long Beach Boulevard/Imperial Highway; Wilshire Boulevard/Veteran Avenue; Sunset Boulevard/Highland Avenue; and La Cienega Boulevard/Century Boulevard. The busiest intersection evaluated (Wilshire Boulevard/Veteran Avenue) had a daily traffic volume of approximately 100,000 vehicles and LOS E in the morning peak hour and LOS F in the evening peak hour.

[2] The intersection of Long Beach Boulevard/Imperial Highway is not within the City limits but is used to represent a condition where there is a high volume of traffic during the a.m. and p.m. peak hours to demonstrate that intersections that are below the volume of traffic at this particular intersection, under less severe atmospheric conditions (i.e., where vertical and horizontal air does not mix), would not result in a CO hot spot.

Sensitive Receptor Impact Analysis

As discussed above, known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Particulate matter can also lead to a variety of health effects in people. These include premature death of people with heart or lung disease, heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms.

Because placement of sensitive land uses falls outside CARB jurisdiction, the CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

The CARB's recommendations for the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. Respiratory and cardiovascular problems including asthma, lung cancer, and premature death have been associated with living near major roadways and freeways.[1] Children who live near major roadways and freeways have been found to have higher asthma rates and reduced lung function.[2] There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks and benzene and butadiene from passenger vehicles. Exposure to DPM accounts for more than 80 percent of the total carcinogenic risk in the Basin.[3] It has been found that outdoor concentrations are highest near the roadway and decrease with increasing distance downwind of the source.[4] The CARB recommends avoiding siting new sensitive land uses within 500 feet of urban roads with more than 100,000 vehicles per day or rural roads with more than 50,000 vehicles per day.[5]

Table N shows a summary of the other CARB recommendations for siting new sensitive land uses within the vicinity of air pollutant sources. Recommendations in the table are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

---

1 Balmes, J.R., Earnest, G., Katz, P.P., Yelin, E.E., Eisner, M.D., Chen, H., Trupin, L., Lurmann, F., and Blanc, P.D. 2009. *Exposure to traffic: Lung function and health status of adults with asthma. The Journal of Allergy and Clinical Immunology*, 123(3):626–631.

2 California Air Resources Board (CARB), 2013. Overview of the Children's Health Study. Website: http://www.arb.ca.gov/research/chs/over.htm (accessed March 2019).

3 South Coast Air Quality Management District (SCAQMD), 2008. *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III).* September.

4 Zhu, Y., Hinds, W.C., Kim, S., Shen, S., and Sioutas, C. 2002. *Study of ultrafine particles near a major roadway with heavy-duty diesel traffic*. Atmospheric Environment, 36(27):4323-4335.

5 California Air Resources Board (CARB), 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

Table N: CARB Recommendations for Siting New Sensitive Land Uses

Source/Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within 1 mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily affected zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: CARB (2005).
CARB = California Air Resources Board

Stationary sources of TACs within the City of Long Beach include the stationary sources permitted by the SCAQMD. Various permitted uses are dispersed throughout the City with a high concentration along the Interstate 710 (I-710) corridor.[1] The other sources of TAC within the City are I-710, State Route 91 (SR-91), Interstate 605 (I-605), and Interstate 405 (I-405), which have annual average daily traffic volumes exceeding 100,000. Based on the information in the TIA, there are no local roadways with more than 100,000 average daily vehicle trips in the City (LSA 2019).

If new sensitive receptors were sited within 500 feet of I-710 or I-405 or within the CARB's minimum siting recommendations of other stationary sources, such as the Port of Long Beach, they may be exposed to significant concentrations of air pollutants. As shown in Figure 2, Project PlaceTypes, residential land uses would be permitted along I-710; however, the project would not result in any major areas of change to residential uses proximate to I-405 and I-710. However, residential land uses would also be near or adjacent to areas designated for commercial and industrial uses and to existing permitted TAC sources. Thus, new residential and other sensitive developments could be sited within the buffer distances shown in Table N to TAC sources. CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents.

[1] South Coast Air Quality Management District (SCAQMD), 2014. *Facility Information Details Maps. Pinpoints locations of permitted facilities.*

The proposed LUE includes the following measures that would allow for buffers and other provisions for reducing exposure of sensitive receptors to TAC emissions:

- **Strategy No. 16:** Protect neighborhoods from adverse environmental conditions.
  - **LU Policy 16-1:** Develop public health and environmental protection programs that promote equity and that provide for the fair treatment of all Long Beach residents, regardless of race, age, culture, income, or geographic location.
  - **LU Policy 16-2:** Continue to work with the State, the Port of Los Angeles, and other agencies and organizations to improve air quality around the ports and reduce vessel, truck, rail, and other equipment emissions from port operations.
  - **LU Policy 16-3:** Continue to be an advocate for residential neighborhoods that will be adversely affected by major port-related facility expansion projects.
  - **LU Policy 16-4:** Work with regional agencies, residents, and businesses to preserve established homes, businesses, and open spaces; limit the exposure of toxic pollutants and vehicle noise and minimize traffic issues impacting residential neighborhoods as a result of the I-710 Freeway expansion.
  - **LU Policy 16-13:** Locate sensitive land uses (e.g., residences, schools, and daycare centers) to avoid incompatibilities with recommended buffer distances identified in the most current version of the CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook). Sensitive land uses that are within the recommended buffer distances listed in the CARB Handbook shall provide enhanced filtration units or submit a Health Risk Assessment (HRA) to the City. If the HRA shows that the project would exceed the applicable thresholds, mitigation measures capable of reducing potential impacts to an acceptable level must be identified and approved by the City.
  - **LU Policy 16-14:** When residential or other sensitive land uses are proposed within proximity to freeways or the Port, use the discretionary review process to impose site plan and design features aimed at minimizing exposure to environmental pollution. For example, locate balconies, outdoor amenity spaces, and when possible occupied portions of buildings as far from the pollution source as a particular site will allow, and require the planting of vegetation and landscape buffering as appropriate.
  - **LU Policy 6-15:** Encourage the design of warehouse and distribution center check-in points that minimize queuing outside of the facility. The design shall also locate truck traffic within the site away from the property line(s) closest to its residential or sensitive receptor neighbors.
  - **LU-M-55:** Continue to develop and implement innovative programs aimed at reducing the air pollutants from port operations (e.g., San Pedro Bay Clean Air Action Plan, Clean Truck Programs, Main Engine Low-Sulfur Fuel Incentive Program, and Shoreside Electricity).

- **North Long Beach Land Use Strategy 1:** Consolidate the intensity of commercial activities into neighborhood-serving nodes, at major corridor crossroads, and in expanded commercial centers.
- **North Long Beach Land Use Strategy 2:** Facilitate the development of new multiple-family housing along corridors between commercial nodes and centers.
- **North Long Beach Land Use Strategy 3:** Buffer heavy industrial activities from residential uses by encouraging Neo Industrial and commercial conversions of some industrial properties.
- **North Long Beach Land Use Strategy 4:** Along Cherry Avenue, Paramount Boulevard, and Downey Avenue, use the Neo Industrial Place Type to develop cleaner and more attractive commercial/industrial properties.
- **North Long Beach Land Use Strategy 5:** Upgrade the quality of development by using design guidelines, new zoning standards, and improved design review processes to ensure that all new buildings, remodels, and additions enhance the neighborhood fabric.
- **North Long Beach Land Use Strategy 6:** Use design guidelines and upgraded zoning standards to further protect established residential districts from the intrusion of commercial activities.
- **North Long Beach Land Use Strategy 7:** Continue to implement the North Long Beach Strategic Guide for Development and North Long Beach Street Enhancement Master Plans (originated under the Redevelopment Agency) including the North Village and North Library plans.
- **North Long Beach Land Use Strategy 8:** Seek opportunities to create open recreation and green areas, and implement the RiverLink Plan for the Los Angeles River.
- **North Long Beach Land Use Strategy 9:** Implement the I-710 Livability Plan.
- **North Long Beach Land Use Strategy 10:** Implement Mobility Element capital improvements for North Long Beach include:
    - Artesia Boulevard Complete Streets Improvements
    - Atlantic Avenue Streetscape Enhancements
    - South Street Signal Improvements
    - Market Street Enhanced Bikeway Access
    - Walnut Avenue Bikeway
- **Bixby Knolls Land Use Strategy 3:** Use design guidelines and upgraded zoning standards to further protect established residential districts from the intrusion of commercial activities.
- **Bixby Knolls Land Use Strategy 4:** Consolidate the intensity of commercial activities along Long Beach Boulevard, Atlantic Avenue, and Cherry Avenue, as depicted on the PlaceTypes Map.
- **Bixby Knolls Land Use Strategy 6:** Seek opportunities to create recreation and green areas, and implement the RiverLink Plan for the Los Angeles River.

- **Bixby Knolls Land Use Strategy 7:** Implement the I-710 Livability Plan for the Long Beach Freeway.
- **Westside and Wrigley Land Use Strategy 2:** Consolidate the intensity of commercial activity along Pacific Coast Highway, Willow Street, Pacific Avenue, and Long Beach Boulevard.
- **Westside and Wrigley Land Use Strategy 5:** Create a landscaped, open space buffer between port-related industrial operations (e.g., ICTF and SCIG railroad yards, trucking and container storage facilities) and neighborhoods on the Westside.
- **Westside and Wrigley Land Use Strategy 6:** Uses allowed in the Edison and Union Pacific Railroad utility rights-of-way must be designed to have minimal dust, noise, traffic, visual and other nuisance impacts on residential neighbors. These properties shall be screened with landscape (green) buffers and proactively maintained.
- **Westside and Wrigley Land Use Strategy 8:** Implement the I-710 Livability Plan for the Long Beach Freeway as part of the I-710 Corridor Project.
- **Westside and Wrigley Land Use Strategy 10:** Improve quality of life, health, and overall livability through the implementation of the West Long Beach Livability Implementation Plan.
- **Eastside Land Use Strategy 10:** Finish the City's urban forestry inventories then develop and implement tree planting, maintenance and greening plans which are coordinated with citywide air quality improvement, greenhouse gas reduction, and local water-saving landscape plans and programs.
- **Central Land Use Strategy 9:** Convert Zaferia's industrial land uses to Neo-Industrial to promote industries that are more environmentally compatible with the residential character of the surrounding neighborhoods.

Goals and policies as outlined above are included in the proposed LUE/UDE that would reduce concentrations of criteria air pollutant emissions and air toxics generated by construction and operation of new developments on nearby residences. Review of projects by SCAQMD for permitted sources of air toxics would ensure that health risks are minimized.

Compliance with Policy 16-13 would ensure that mobile sources of TACs not covered under SCAQMD permits are considered during subsequent project-level environmental review. Policy 16-13 would also require the preparation of project-specific technical health risk assessments evaluating exposure-related health risk impacts to ensure that the risk associated with the development of sensitive receptors would be minimized. In addition, Policy 16-14 identifies the use of the discretionary review process for residential and other sensitive land uses near freeways or the Port to impose site plan and design features aimed at minimizing exposure to environmental pollution. Therefore, compliance with Policy 16-13 and Policy 16-14 would ensure the potential TAC health risk impact associated with the siting of sensitive receptors in areas of potential TAC exposure would be less than significant.

Impact No. 6: Land uses associated with the anticipated General Plan build out scenario (year 2040) would not have the potential to create objectionable odors that could affect a substantial number of people. [Threshold AQ-4]

Odor Impact Analysis

Growth within the City of Long Beach could generate new sources of odors and place sensitive receptors near existing sources of odors. Nuisance odors from land uses in the Basin are regulated under SCAQMD Rule 402, Nuisance, which states:

> *A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.*

Industrial land uses have the potential to generate objectionable odors. Examples of odor-generating industrial projects are wastewater treatment plants, compost facilities, landfills, solid-waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. While industrial land uses associated with the proposed project would be required to comply with SCAQMD Rule 402 would prevent an odor nuisance.

Residential and commercial land uses could result in generation of odors such as exhaust from landscaping equipment. However, unlike industrial land uses, these are not considered potential generators of odor that could affect a substantial number of people. Therefore, impacts from potential odors generated from residential and commercial land uses associated with the project are considered less than significant.

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment and unlikely to affect a substantial number of people. In addition, by the time such emissions reached any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of the odor-producing materials. Therefore, impacts associated with construction-generated odors are considered less than significant.

While odor sources are present within the City, the odor policies enforced by the SCAQMD, including Rule 402, and City of Long Beach Municipal Code Section 8.64.040, prohibit nuisance odors and identify enforcement measures to reduce odor impacts to nearby receptors. Development of land uses consistent with the proposed project that would have the potential to result in nuisance

odors would be required to comply with these regulations. Therefore, impacts associated with objectionable odors would be less than significant.

Compliance Measures

Compliance Measures are regulations imposed uniformly by the approving agency based on the proposed action taken and are required of the proposed project to reduce its potential environmental effects. Because these features are standard requirements, they do not constitute mitigation measures. The following compliance measure would apply to discretionary projects that might be facilitated by the proposed project with respect to air quality. Compliance Measure AQ-1 includes a list of the types of measures within the existing regulatory framework that future projects may be required to comply with based on their specific impacts.

CM AQ-1: To ensure compliance with South Coast Air Quality Management District (SCAQMD) rules and provide Best Management Practices (BMPs) to reduce air pollutant emissions during construction of future projects facilitated under the proposed project, the construction contractor shall implement the following BMPs during construction, where feasible, to further reduce emissions from construction emissions of VOC, NOx, and particulate matter:

- Install temporary construction power supply meters on site and use these to provide power to electric power tools whenever feasible. If temporary electric power is available on site, forbid the use of portable gasoline- or diesel-fueled electric generators.
- Use of diesel oxidation catalysts and/or catalyzed diesel particulate traps on diesel equipment, as feasible.
- Maintain equipment according to manufacturers' specifications.
- Restrict idling of equipment and trucks to a maximum of 5 minutes (per California Air Resources Board [CARB] regulation).
- Phase grading operations to reduce disturbed areas and times of exposure.
- Avoid excavation and grading during wet weather.
- Limit on-site construction routes and stabilize construction entrance(s).
- Remove existing vegetation only when absolutely necessary.
- Sweep up spilled dry materials (e.g., cement, mortar, or dirt track-out) immediately. Never attempt to wash them away with water. Use only minimal water for dust control.
- Store stockpiled materials and wastes under a temporary roof or secured plastic sheeting or tarp.

- Properly dispose of all demolition wastes. Materials that can be recycled from demolition projects include: metal framing, wood, concrete, asphalt, and plate glass. Unusable, un-recyclable debris should be confined to dumpsters, covered at night, and taken to a landfill for disposal. Hazardous debris such as asbestos must be handled in accordance with specific laws and regulations and disposed of as hazardous waste. For more information on asbestos handling and disposal regulations, contact the SCAQMD.

Level of Significance Before Mitigation Measures

Upon implementation of regulatory requirements and compliance measures, the following air quality impacts may still be potentially significant and require mitigation:

- **Impact No. 2:** Construction activities associated with the anticipated General Plan build out scenario (year 2040) could generate short-term emissions that could potentially exceed the SCAQMD'S significance thresholds.
- **Impact No. 3:** The anticipated General Plan build out scenario (year 2040) would generate long-term emissions that may potentially exceed the SCAQMD's regional significance thresholds and would cumulatively contribute to the nonattainment designations of the Basin.
- **Impact No. 4:** The anticipated General Plan build out scenario (year 2040) may expose sensitive receptors to substantial concentrations of criteria air pollutants and toxic air contaminants.

Air Quality Mitigation Measures

Impact No. 2. Mitigation Measure (MM) AQ-1 would reduce construction period air pollutant emissions of the proposed project.

MM AQ-1 Prior to issuance of any construction permits, future development projects subject to discretionary review under the California Environmental Quality Act (CEQA) shall prepare and submit to the City of Long Beach (City) Department of Development Services Planning Bureau a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the Department of Development Services. Mitigation measures to reduce construction-related emissions include, but are not limited to:

- Require the following fugitive-dust control measures:
  - Use nontoxic soil stabilizers to reduce wind erosion.
  - Apply water every 4 hours to active soil-disturbing activities.
  - Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials.
- Use construction equipment rated by the United States Environmental Protection Agency (USEPA) as having Tier 4 (model year 2008 or newer) emission limits (when available), or Tier 3 (model year 2006 or newer), applicable for engines between 50 and 750 horsepower.
- Ensure that construction equipment is properly serviced and maintained to the manufacturers' standards.
- Limit nonessential idling of construction equipment to no more than 5 consecutive minutes.
- Using Super-Compliant volatile organic compound (VOC) paints for coating of architectural surfaces whenever possible.[1]
- Suspend all soil disturbance activities when winds exceed 25 mph as instantaneous gusts or when visible plumes emanate from the site and stabilize all disturbed areas.
- Post a publicly visible sign with the telephone number and person to contact at the City of Long Beach regarding dust complaints. The SCAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
- Sweep all streets at least once a day using SCAQMD Rule 1186, 1186.1 certified street sweepers or roadway washing trucks if visible soil materials are carried to adjacent streets. The use of water sweepers with reclaimed water is recommended.
- Apply water three times daily or non-toxic soil stabilizers according to manufactures' specifications to all unpaved parking or staging areas, unpaved road surfaces, or to areas where soil is disturbed. Reclaimed water should be used when available.
- Construction vendors, contractors, and/or haul truck operators shall utilize 2010 model year trucks (e.g., material delivery trucks and soil import/export) that meet CARB's 2010 engine emission standards at 0.01 g/bhp-hr of particulate

[1] A list of Super-Compliant architectural coating manufactures can be found on the SCAQMD website at http://www.aqmd.gov/prdas/brochures/Super-Compliant_AIM.pdf.

(PM) and 0.20 g/bhp-hr of NOx emissions or newer, cleaner trucks. Operators shall maintain records of all trucks associated with the project construction to document that each truck used meets these emission standards, and make the records available for inspection.

Impact No. 3. Mitigation Measure AQ-2 would reduce operational air pollutant emissions of the proposed project.

MM AQ-2 Prior to future discretionary project approval, development project applicants shall prepare and submit to the City Department of Development Services a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with SCAQMD methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Project Conditions of Approval. Possible mitigation measures to reduce long-term emissions include but are not limited to:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plugging in the anticipated number of refrigerated trailers to reduce idling time and emissions.
- Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board (CARB) Rule 2845 (13 California Code of Regulations [CCR] Chapter 10, Section 2485).
- Require that 240-volt electrical outlets or Level 3 chargers be installed in parking lots that would enable charging of neighborhood electric vehicles (NEVs and/or battery powered vehicles.
- Maximize use of solar energy including solar panels; installing the maximum possible number of solar energy arrays on the building roofs throughout the City to generate solar energy.
- Maximize the planting of trees in landscaping and parking lots.
- Use light colored paving and roofing materials.
- Require use of electric or alternatively fueled street-sweepers with HEPA filters.
- Require use of electric lawn mowers and leaf blowers.

- Utilize only Energy Star heating, cooling, and lighting devices, and appliances.
- Use of water-based or low volatile organic compound (VOC) cleaning products.

Impact No. 4. Mitigation Measure AQ-3 and compliance with Policy 16-13 in the proposed LUE would reduce operational toxic air contaminant (TACs) emissions of the proposed project.

MM AQ-3 Prior to future discretionary approval for projects that require environmental evaluation under CEQA, the City of Long Beach shall evaluate new development proposals for new industrial or warehousing land uses that (1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units, and (2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, or nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use. Such projects shall submit a Health Risk Assessment (HRA) to the City Department of Development Services. The HRA shall be prepared in accordance with policies and procedures of the most current State Office of Environmental Health Hazard Assessment (OEHHA) and the SCAQMD. If the HRA shows that the incremental health risks exceed their respective thresholds, as established by the SCAQMD at the time a project is considered, the Applicant will be required to identify and demonstrate that best available control technologies for toxics (T-BACTs), including appropriate enforcement mechanisms to reduce risks to an acceptable level. T-BACTs may include, but are not limited to, restricting idling on site or electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.

Level of Significance After Mitigation

While the proposed project would be consistent with the 2016 AQMP's land use policies aimed at reducing air emissions and would not increase population or employment in the City, the project would result in additional housing units that would generate VOC and CO emissions above established SCAQMD thresholds. Therefore, based on the requirements for consistency with emission control strategies in the AQMP, the project would conflict with or obstruct the implementation of the AQMP and/or applicable portions of the SIP. This impact would be significant and unavoidable.

Mitigation Measures MM AQ-1, AQ-2, and AQ-3 would significantly reduce criteria air pollutant emissions generated during construction activities, operational activities, and the effects of TACs. While implementation of MM AQ-1, AQ-2, and AQ-3 would reduce criteria pollutant emissions and emissions of TACs, there currently is not enough information available to quantify emissions during operation of future project-specific development that may occur under the proposed project. Without quantification to guarantee a less than significant finding, future development projects may still exceed the SCAQMD regional significance thresholds, and in an abundance of caution, Impact Nos. 2 through 4 would be considered to remain significant and unavoidable.

As concluded above under the discussion of Impact No. 2, specific BMP measures are included as compliance measures, and are identified to ensure that the intended environmental protections are achieved. These BMP measures are identified for future project developments that may be implemented under the proposed project that require environmental evaluation under CEQA. Additionally, Mitigation Measure AQ-1 is identified requiring the preparation of project-specific technical assessments evaluating construction-related air quality impacts to ensure that construction-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. With implementation of compliance measures and Mitigation Measure AQ-1, the potential construction emissions impacts associated with future development facilitated by the proposed project would be reduced to the extent feasible. However, since the combination, number, and size of projects that could be under construction at any one time are unknown, this impact is considered significant and unavoidable.

Policy 16-13 would require new sensitive land uses to be evaluated for potential health risks, consistent with CARB and SCAQMD guidance. Compliance with Mitigation Measure AQ-3 would ensure that effects from specific projects are quantified; however, Impact AQ-4 would be significant and unavoidable.

Greenhouse Gas Emission impacts

Existing Conditions

An emissions inventory of the City of Long Beach was conducted based on the existing land uses and is shown in Table O, which identifies existing land uses as residential, commercial, office, and industrial. Criteria air pollutant emissions generated in the City were estimated using EMFAC2017 for VMT and CalEEMod for area and energy sources.

Table O: Existing City of Long Beach Greenhouse Gas Emissions Inventory

Sector	Existing (CEQA Baseline) 2018 GHG Emissions	
	MT CO_2e/yr	Percent of Total
Transportation (2018 Emission Factors)[1]	1,394,808	58.9
Area Source - Residential: Landscaping/Consumer Products[2]	40,484	1.7
Area Source - Commercial + Industrial: Landscaping/ Consumer Products[2]	1	0.0
Area Source - Public Facilities/Institutional: Landscaping/ Consumer Products[2]	0	0.0
Energy: Residential [2]	438,967	18.5
Energy: Commercial + Industrial [2]	209,635	8.9
Energy: Public Facilities/Institutional [2]	49,276	2.1
Waste: Residential[2]	58,191	2.5
Waste: Commercial + Industrial[2]	52,512	2.2
Waste: Public Facilities/Institutional[2]	6,060	0.3
Water: Residential[2]	60,441	2.6
Water: Commercial + Industrial[2]	51,291	2.2
Water: Public Facilities/Institutional[2]	5,823	0.3
Existing Year 2018 Emissions Total	**2,367,487**	**-**
Service Population[3]	619,409	-
MT CO_2e/yr/SP	3.8	-

Source: Compiled by LSA Associates, Inc. (2019).
Note: Emissions may not total 100 percent due to rounding.
[1] Transportation on-road mobile source data was calculated using EMFAC2017. Model runs were based on citywide VMT data provided by LSA. VMT per year based on a conversion of VMT × 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology.
[2] Area Source, Energy use, Waste, and Water data were calculated using CalEEMod version 2016.3.2.
[3] Service Population is the sum of the residential population and workplace employees within the City.
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
LUE = Land Use Element
MT CO_2e/yr = metric tons of carbon dioxide equivalent per year
MT CO_2e/yr/SP= metric tons of carbon dioxide equivalent per year per service population
VMT = vehicle miles traveled

Emissions for the City:[1]

- **Transportation:** Emissions from vehicle trips beginning and ending in the City and from external/internal vehicle trips (i.e., trips that either begin or end in the City).
- **Area Sources:** Emissions generated from lawn and garden, commercial, and construction equipment use in the City.
- **Energy:** Emissions generated from purchased electricity and natural gas consumption used for cooking and heating in the City.
- **Solid Waste Disposal:** Indirect emissions from waste generated in the City.
- **Water/Wastewater:** Emissions from electricity used to supply, treat, and distribute water based on the overall water demand and wastewater generation in the City.

Impact No. 6: The anticipated General Plan build out scenario (year 2040) would result in a substantial reduction in GHG emissions per service population; as such, there would be a substantial decrease in GHG emissions compared to existing conditions. However, despite the project's decrease in GHG emissions, the proposed project GHG emissions would exceed the City's target threshold of 1.92 MT CO_2e per service population per year. [Threshold GHG-1]

Greenhouse Gas Emissions Analysis

This GHG evaluation was prepared in accordance with the requirements of CEQA to determine if significant GHG impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project.

[1] Life-cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions, found that life-cycle analysis was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life-cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

Implementation of the proposed project would contribute to global climate change through direct and indirect emissions of GHG from land uses within the City of Long Beach. The change in GHG emissions is based on the difference between existing land uses and those associated with the proposed implementation of the proposed project. Table O compares the community-wide GHG emissions inventory for the City of Long Beach under existing conditions, the anticipated General Plan build out scenario (year 2040), and year 2040 no project scenario (assuming existing General Plan conditions). Inventories for both 2040 scenarios (project and no project) include reductions from federal and State measures identified in the CARB's Scoping Plan, including the Pavley fuel efficiency standards, LCFS for fuel use (transportation and off-road), and a reduction in carbon intensity from electricity use.

As shown in Table P, GHG emissions associated with the anticipated General Plan build out scenario would exceed the efficiency threshold of 1.92 MT CO_2e/yr/SP in the City in horizon year 2040.

Table P: Anticipated General Plan Build Out 2040 GHG Emissions Inventory

Sectors	Existing 2018 GHG Emissions (MT CO_2e/yr)	Anticipated General Plan 2040 Build Out (MT CO_2e/yr)	2040 No Project (MT CO_2e/yr)	Percent of Total Proposed Project
Transportation (2040 Emission Factors)[1]	1,394,808	890,829	878,821	53.3
Area: Residential[2]	40,484	37,345	34,324	2.2
Area: Commercial + Industrial[2]	1	1	1	0.0
Area: Public Facilities/Institutional[2]	0	1	1	0.0
Energy: Residential[2]	438,967	336,360	315,904	20.1
Energy: Commercial + Industrial[2]	209,635	150,273	150,273	9.0
Energy: Public Facilities/Institutional[2]	49,276	32,366	32,366	1.9
Waste: Residential[2]	58,191	64,066	60,926	3.8
Waste: Commercial + Industrial[2]	52,512	65,529	65,529	3.9
Waste: Public Facilities/Institutional[2]	6,060	6,297	6,297	0.4
Water: Residential	60,441	41,257	38,363	2.5
Water: Commercial + Industrial[2]	51,291	42,764	42,764	2.6
Water: Public Facilities/Institutional[2]	5,823	3,330	3,330	0.2
Emissions Total	**2,367,487**	**1,670,419**	**1,628,900**	N/A
Service Population[3]	619,409	666,150	666,150	N/A
Emissions per Service Population	3.8	2.5	2.4	N/A
Plan-Level Efficiency Threshold	1.92	1.92	1.92	N/A

Source: Compiled by LSA Associates, Inc. (2019).
Note: Emissions may not total 100 percent due to rounding.
[1] Transportation on-road mobile source data was calculated using EMFAC2017. Model runs were based on citywide VMT data. VMT per year based on a conversion of VMT × 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology.
[2] Area Source, energy use, waste, and water data were calculated using CalEEMod version 2016.3.2. Area Sources include landscaping equipment and consumer product use.
[3] Service Population is the sum of the residential population and workplace employees within the City.
CO_2e = carbon dioxide equivalent
MT CO_2e/yr = metric tons of carbon dioxide equivalent per year
GHG = greenhouse gas
N/A = not applicable

On a service population basis, the anticipated General Plan build out scenario (year 2040) would reduce the GHG emissions from 2,367,487 MT CO_2e/yr/SP under existing conditions down to

1,670,419 MT CO_2e/yr/SP under the anticipated General Plan build out scenario (year 2040). Implementation of the proposed project would result in lower GHG emissions within the City in the future year due to the way in which the model calculates non-peak trips for overcrowded households; however, the project would result in higher VMT rates with the project when compared to the 2040 no project scenario (existing General Plan in the future year). Although the GHG emissions per service population would be lower under future year conditions, the emission rate of 2.5 MT CO_2e/yr/SP would exceed the 1.92 MT CO_2e/yr/SP criterion established by the City for purposes of this environmental evaluation.

Implementation of the proposed LUE policies would help further reduce GHG emissions. Many of these policies promote an increase in concepts and designs that would increase walking, bicycling, and use of public transit, which would contribute to reduced VMT. In addition, infill development near public transit would help create sustainable development patterns. The LUE includes the following strategies and policies that would result in further reductions in GHG emissions:

- **Strategy No. 2:** Promote efficient management of energy resources to reduce greenhouse gas emissions and the impacts of climate change by employing a full range of feasible means to meet climate goals.
  - **LU Policy 2-1:** Promote the establishment of local green energy generation projects along with the infrastructure to support such projects.
  - **LU Policy 2-2:** Ensure that long-range planning processes consider impacts of sea level rise and propose mitigation measures.
- **Strategy No. 4:** Attract and invest in green and innovative industries to expand creative employment opportunities.
  - **LU Policy 4-1:** Provide a Land Use Plan that allows a place for green energy development and green businesses.
  - **LU Policy 4-2:** Promote the transition of some heavy industrial and manufacturing sites to creative green and sustainable industries.
- **Strategy No. 20:** Preserve, restore, and protect water bodies, natural areas, and wildlife habitats.
  - **LU Policy 20-8:** Manage and restore land to increase carbon storage and minimize greenhouse gas emissions in a sustainable manner by increasing the City's carbon sinks over time.
    - **LU-M-3:** Consider including development incentives in the Zoning Regulations that allow greater development flexibility if projects include affordable housing; creative open space; cultural amenities; historic preservation or green building elements beyond those required; renewable energy components; and transit, pedestrian and bicycle amenities.
    - **LU-M-8:** Require that all new City building projects and major renovations achieve at least LEED silver certification.

- **LU-M-9:** Require that all new City leases and tenant improvements follow LEED standards. Require energy efficiency standards to be part of all City lease/rental agreements.
- **LU-M-10:** Continue to utilize solar power within public buildings and on public sites, and continue to study means by which solar power can be incorporated into all aspects of municipal services.
- **LU M-11:** Continue to implement the Sustainability Action Plan. Introduce new goals and action measures that promote sustainability, including items related to land use and mobility planning, increasing walking and biking, increasing energy efficiency, reducing greenhouse gases and promoting renewable energy.
- **LU-M-12:** Create innovative renewable energy partnerships and demonstration projects.
- **LU-M-59:** Attract renewable energy and green technology manufacturing companies to establish a presence/office in Long Beach. Facilitate the creation of jobs in the renewable/clean energy sector.
- **LU-M-62:** Continue to implement the Green Recognition Program, which is designed to encourage Long Beach business owners who have implemented sustainable practices to share their success stories and receive recognition for going green.
- **LU-M-63:** Partner with Pacific Gateway Workforce Investment Network's Green Job Corps, California State University at Long Beach, Long Beach City College and other educational organizations, agencies and non-profit organizations to coordinate the creation of a training academy and programs for green jobs.
- **LU-M-64:** Work with Southern California Edison and other utility companies to provide rebates and savings programs for businesses using green technologies or emphasizing green industries.
- **LU-M-65:** Repurpose business development grants and loans for green business development in Long Beach. Encourage technology and manufacturing companies to take advantage of Long Beach green business development opportunities.
- **LU-M-66:** Implement a City green business program that incorporates goals and strategies for waste reduction, energy efficiency, water conservation, green purchasing, and similar strategies.
- **LU-M-67:** Encourage the formation of a local environmental business network to share information and promote green business strategies and best practices.
- **LU-M-68:** Develop a "shop green" program to increase consumer awareness about local green businesses and products so that consumers can easily make green purchasing choices.
- **LU-M-69:** Conduct green business workshops designed to help local businesses go green and showcase local green vendors and products.

- **LU-M-70:** Explore funding opportunities to provide incentives for businesses to make environmental improvements.
- **LU-M-71:** Explore the feasibility of establishing a City Hall liaison to help business owners navigate environmental requirements.
- **LU-M-72:** Explore the feasibility of establishing "Green Zones," a Clean Up Green Up program, or similar, to allow businesses with harsh emissions to "Clean Up" by providing resources and programs through the City and partner agencies. Green Zones are defined as a community-led strategy to transform areas in Long Beach that are overburdened by pollution and inequity into healthy, thriving neighborhoods. Green Zones in Long Beach will reflect the needs, priorities, and issues identified by residents who know their community best. Green Zones will focus on the low-income communities and people of color in West, Central and North Long Beach—who are most impacted by the local pollution—while these equity measures will benefit the entire City.
- **LU-M-73:** Continue to update the City's greenhouse gas (GHG) emissions inventory with the California Climate Action Registry, which will enable the City to better meet future environmental regulations and secure future grant funding for sustainability programs.
- **LU-M-74:** Through the Port of Long Beach, provide Greenhouse Gas Emissions Reduction Grant Program and similar programs aimed at implementing strategies to reduce the impacts of greenhouse gases.
- **LU-M-75:** Continue to implement the 2010 Clean Air Action Plan Update aimed at reducing air pollution emissions from port-related cargo movement.
- **LU-M-76:** Continue to consult with the Port of Los Angeles to reduce emissions from port operations.
- **LU-M-77:** Continue to support/coordinate programs and organizations aimed at improving energy efficiency and reducing greenhouse gas emissions.
- **LU-M-78:** Implement the Technology Advancement Program to identify, evaluate, and demonstrate new and emerging emissions reduction technologies/strategies that could be utilized in future updates to the Clean Air Action Plan.
- **LU-M-79:** Consult with utility companies in promoting and developing renewable energy and emerging greenhouse gas reduction technologies. Identify potential sites within the Regional-Serving Facilities PlaceType to locate such facilities.

- **Eastside Land Use Strategy 10:** Finish the City's urban forestry inventories then develop and implement tree planting, maintenance and greening plans which are coordinated with citywide air quality improvement, greenhouse gas reduction, and local water-saving landscape plans and programs.

Impact No. 7: The proposed project would potentially conflict with plans adopted for the purpose of reducing greenhouse gas emissions. [Threshold GHG-2]

Greenhouse Gas Reduction Plan Consistency Analysis

The following discusses the consistency of the proposed project to the CARB Scoping Plan, and SCAG's 2016 RTP/SCS in addition to the City's Sustainable City Action Plan.

Consistency with the Long-Term Goal of AB 32 and SB 32. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program.

In addition, SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Executive Order B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the global emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB in the following areas related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197, intended to provide easier public access to air emissions data that are collected by CARB, was posted in December 2016. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures.

As shown in Table O, the community-wide GHG emissions for the anticipated General Plan build out scenario (year 2040) would exceed the City's efficiency target of 1.92 MT CO_2e/yr/SP. The CAAP targets and service population threshold would measure progress in meeting the AB 32 and SB 32 reduction targets.

The proposed project includes various policies that would contribute to reduced GHG emissions. While these policies would contribute to reduced GHG emissions, the City would require assistance from additional federal and State programs and regulations to achieve the long-term GHG emissions goal. Therefore, GHG impacts within the City of Long Beach from the overall growth under the proposed project would need to develop a GHG reduction plan as recommended under *State CEQA Guidelines* Section 15183.5 in order to achieve the long-term GHG reductions goals under AB 32 and SB 32 so that the proposed project would not cumulatively contribute to the long-term GHG emissions in the State. As previously noted, the City is in the process of preparing the CAAP which will identify the GHG reduction measures needed to achieve the targets. The CAAP has been identified as a mitigation measure to reduce GHG impacts associated with growth anticipated under the project.

CARB Scoping Plan. In accordance with AB 32, the CARB developed the Scoping Plan to outline the State's strategy to achieve 1990-level emissions by year 2020. Since adoption of the 2008 and 2017 Scoping Plans, State agencies have adopted programs identified in the Scoping Plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide

strategies to reduce GHG emissions include the LCFS and changes in the corporate average fuel economy standards (e.g., Pavley I and 2017–2025 CAFE standards). These statewide measures are applicable uniformly throughout the State, and all future developments under the proposed project would be in compliance.

Table Q provides a summary of the statewide strategies and the associated GHG emissions reductions when integrated into the proposed project. In addition to these statewide strategies, the LUE/UDE policies outlined above would also contribute to reducing GHG emissions. Therefore, the proposed project would be consistent with the Scoping Plan, and impacts are considered less than significant.

Table Q: Statewide GHG Emissions Reduction Strategies

Policy/Action	Policy/Implementation Action Description
Circulation/Land Use	
Pavley I	A clean-car standard that reduces GHG emissions from new passenger vehicles (light- to medium-duty) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the U.S. Environmental Protection Agency.
Advanced Clean Car (Pavley II)	A multifaceted approach focused on controlling smog and soot and reducing GHG emissions from passenger vehicles for model years 2015–2025. It is designed to extend beyond Pavley I (i.e., 2016). The program is anticipated to reduce GHG emissions by 12 percent in year 2025.
Low Carbon Fuel Standard (LCFS)	Requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and of at least 10 percent by 2020. Applies to refiners, blenders, producers, and importers of transportation fuels and uses market-based mechanisms to allow providers to use the most economically feasible methods to reduce emissions during the fuel cycle.
Energy Efficiency and Use	
Title 24 Energy Standards	Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and are updated triennially to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. Buildings that are constructed in accordance with the current 2016 Building and Energy Efficiency Standards are 46 percent more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.
Title 24 CALGreen	Adopted in 2008 as part of the California Green Building Standards Code. Established planning and design standards for sustainable site development, energy efficiency, water conservation, material conservation, and internal air contaminants.
60 percent RPS	Senate Bill 100 was signed in September 2018 and raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.
Title 20	The 2016 Appliance Efficiency Regulations were adopted by the California Energy Commission and approved by the California Office of Administrative Law in 2016. The regulations include standards for both federally and non-federally regulated appliances.

Source: Compiled by LSA Associates, Inc. (2019).
CALGreen = California Green Building Standards
GHG = greenhouse gas
RPS = Renewable Portfolio Standard

SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategies. SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2016 RTP/SCS incorporates local land-use projections and circulation networks in city and county general plans. The projected regional development pattern, including locations of land uses and residential densities included in local general plans, when integrated with the proposed regional transportation network identified in the 2016 RTP/SCS, would reduce per capita vehicular travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region of 8 percent per capita from 2005 GHG emission levels by 2020 and 19 percent per capita from 2005 GHG emission levels by 2035. The strategies, programs, and projects outlined in the 2016 RTP/SCS are projected to result in GHG emissions reductions in the SCAG region that meet or exceed these targets. The proposed project and its policies would be consistent with the applicable RTP/SCS goals. Implementation of the LUE/UDE policies would create higher density mixed-use communities. In addition, the proposed project includes various policies that would call for creation of more mixed-use and walkable communities; therefore, the proposed project would contribute to reduced VMT per capita and overall GHG emissions from passenger vehicles. Therefore, the proposed project is consistent with SCAG's 2016 RTP/SCS.

City of Long Beach Sustainable City Action Plan. The Sustainable City Action Plan is a City-adopted plan to guide the City in becoming more sustainable. The plan identifies a wide range of goals and implementation actions to conserve energy and water, reduce solid waste, address global warming, tailor urban design, protect natural habitats, improve transportation options, and reduce risks to human health. Specific goals related to GHG include increasing the use of renewable energy in Long Beach and reducing the City's overall electric load by 10 percent. Other goals include reducing single-occupancy vehicle trips by 10 percent and advancing higher density mixed-use neighborhoods that are bike and pedestrian friendly. The proposed project includes various policies that are and would be consistent with these goals and initiatives of the Sustainable City Action Plan.

Existing Regulations/Compliance Measures: The following list includes State and local regulations and conditions.

- **State**
  - **EO S-3-05 and EO B-30-15:** Greenhouse Gas Emission Reduction Targets
  - **AB 32:** California Global Warming Solutions Act
  - **SB 375:** Sustainable Communities Strategies
  - **AB 1493:** Pavley Fuel Efficiency Standards
  - **Title 20 California Code of Regulations:** Appliance Energy Efficiency Standards
  - **Title 17 California Code of Regulations:** Low Carbon Fuel Standard
  - **AB 1881:** California Water Conservation in Landscaping Act of 2006
  - **SB 1368:** Statewide Retail Provider Emissions Performance Standards
  - **SB 350:** Renewable Portfolio Standards

- **Title 24, Part 6, California Code of Regulations:** Building and Energy Efficiency Standards
- **Title 24, Part 11, California Code of Regulations:** Green Building Standards Code

- **Local**
  - **Green Building Ordinance:** City of Long Beach Municipal Code Title 18, Chapter 18.47, Sections 18.47.010 to 18.47.080

Level of GHG Significance Before Mitigation

Upon implementation of regulatory requirements and compliance measures, the GHG impact would remain significant.

Impact No. 6. The anticipated General Plan build out scenario (year 2040) would result in a decrease in GHG emissions compared to existing conditions. However, the proposed project GHG emissions would not meet the long-term GHG reductions goal under AB 32 and SB 32 reduction targets.

Therefore, mitigation is required.

Mitigation Measures

Impact No. 6. Mitigation Measure GHG-1 would reduce GHG emissions of the proposed project.

MM GHG-1 The City of Long Beach (City) shall develop and adopt a greenhouse gas (GHG) Reduction Plan or Climate Action and Adaptation Plan (CAAP) to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term state GHG reduction goals. Within approximately 36 months of adoption of the proposed General Plan Land Use Element (LUE)/Urban Design Element (UDE) project, the City of Long Beach shall prepare and present to the City Council for adoption a CAAP. The CAAP shall identify strategies to be implemented to reduce GHG emissions associated with the City. In addition, the City shall monitor GHG emissions by updating its community-wide GHG emissions inventory every 5 years upon adoption of the initial CAAP. The CAAP will include details on how the reduction programs will be implemented and will designate responsible parties to monitor progress and ensure implementation of the reductions within the CAAP. A monitoring and reporting program shall be included to ensure the CAAP achieves the reduction targets.

Level of Significance After Mitigation

Implementation of the land use strategies contained in the LUE/UDE would reduce emissions to the extent feasible. In addition, Mitigation Measure GHG-1 would require the City to adopt a GHG Reduction Plan or Climate Action and Adaption Plan to ensure that the City meets short- and long-term GHG reduction goals established by the State. While this mitigation measure would serve to reduce GHG emissions associated with build out of the project, additional State-sponsored reduction programs may be required in order to meet the service population threshold set by the CAAP. Because the performance of GHG reduction measures in the CAAP and compliance with future targets cannot be assured at this time, and in an abundance of caution, GHG emission

impacts would remain significant and unavoidable even with implementation of Mitigation Measure GHG-1.

This page intentionally left blank

APPENDIX A

EMISSIONS CALCULATIONS

This page intentionally left blank

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Year: 2018
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Ye	Fleet	Vehicle Catey	Fleet Mix	Model Yea	Speed	Fuel	Population	VMT	Trips	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSOAK	ROG_RUNLOSS	ROG_RESTLOSS	ROG_DIURN	CO_RUNEX	CO_IDLEX	CO_STREX	NOx_RUNEX	NOx_IDLEX	NOx_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_PMTW	PM10_PMBW	PM2_5_RUNEX	PM2_5_IDLEX	PM2_5_STREX	PM2_5_PMTW	PM2_5_PMBW	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX
								vehicle/day	miles/day	trips/day	g/mile	g/vehicle/day	g/trip	g/trip	g/trip	g/vehicle/day	g/vehicle/day	g/mile	g/vehicle/day	g/trip	g/mile	g/vehicle/day	g/trip	g/mile	g/vehicle/day	g/trip	g/mile	g/vehicle/day	g/trip	g/mile	g/mile	g/mile	g/vehicle/day	g/trip	g/mile	g/mile	g/mile	g/vehicle/day	g/trip	g/mile	g/vehicle/day	g/trip	g/mile	g/vehicle/day	g/trip
Los Angeles (SC)	2018	1	LDA	0.54792	Aggregate	Aggregate	GAS	3787140.552	152352408.3	17836906.86	0.024596279	0	0.342830645	0.137953852	0.265818435	0.319778873	0.360541652	1.102129503	0	2.421362218	0.074708419	0	0.248354937	0.003033444	0	0.000600566	0.002046489	0	0.002212067	0.008000002	0.036750011	0.001882095	0	0.002035106	0.002000001	0.015750005	306.5382038	0	60.6888996	0.00571393	0	0.070820159	0.006879264	0	0.029738404
Los Angeles (SC)	2018	1	LDA		Aggregate	Aggregate	DSL	25490.99936	1030226.731	118708.8221	0.0359132	0	0	0	0	0	0	0.368665604	0	0	0.168675175	0	0	0.002275742	0	0	0.020087837	0	0	0.008000002	0.036750011	0.019218846	0	0	0.002000001	0.015750005	240.727643	0	0	0.001668099	0	0	0.037839033	0	0
Los Angeles (SC)	2018	1	LDA		Aggregate	Aggregate	ELEC	41946.83649	1607385.571	211903.9032	0	0	0	0.004888026	0	0.007500233	0.022407439	0	0	0	0	0	0	0	0	0	0	0	0	0.008000002	0.036750011	0	0	0	0.002000001	0.015750005	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2018	2	LDT1	0.046127	Aggregate	Aggregate	GAS	399738.3858	15417610.87	1824084.367	0.066816785	0	0.557968898	0.287575421	1.003261126	0.681410204	0.859318609	2.4165198	0	2.664186855	0.218463205	0	0.367716099	0.003521636	0	0.000703344	0.003671558	0	0.003475888	0.008000002	0.036750011	0.003377489	0	0.003197703	0.002000001	0.015750005	355.8714154	0	71.07494774	0.014209647	0	0.104585906	0.014330616	0	0.034412107
Los Angeles (SC)	2018	2	LDT1		Aggregate	Aggregate	DSL	375.8082074	9678.848446	1349.673014	0.241553849	0	0	0	0	0	0	1.32135776	0	0	1.253808256	0	0	0.004581118	0	0	0.182348282	0	0	0.008000002	0.036750011	0.174459976	0	0	0.002000001	0.015750005	484.5900204	0	0	0.011219715	0	0	0.076170803	0	0
Los Angeles (SC)	2018	2	LDT1		Aggregate	Aggregate	ELEC	980.9928755	31333.39808	4658.79438	0	0	0	0.004888026	0	0.007500233	0.022407439	0	0	0	0	0	0	0	0	0	0	0	0	0.008000002	0.036750011	0	0	0	0.002000001	0.015750005	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2018	3	LDT2	0.19933	Aggregate	Aggregate	GAS	1276816.328	50345385.82	5957553.211	0.039345599	0	0.464238335	0.162168464	0.503113055	0.413475993	0.431963381	1.587050645	0	3.149582889	0.1600783	0	0.431234574	0.003929242	0	0.000790369	0.002210024	0	0.002202427	0.008000002	0.036750011	0.0020332	0	0.002026279	0.002000001	0.015750005	397.0611735	0	79.86909573	0.008731553	0	0.09369384	0.011311577	0	0.040988698
Los Angeles (SC)	2018	3	LDT2		Aggregate	Aggregate	DSL	5287.651852	247931.814	26272.04647	0.029314285	0	0	0	0	0	0	0.195735159	0	0	0.074508399	0	0	0.003114286	0	0	0.011181948	0	0	0.008000002	0.036750011	0.010698222	0	0	0.002000001	0.015750005	329.4286696	0	0	0.001361592	0	0	0.051781599	0	0
Los Angeles (SC)	2018	3	LDT2		Aggregate	Aggregate	ELEC	4752.691838	171904.9306	24329.14215	0	0	0	0.004888026	0	0.007500233	0.022407439	0	0	0	0	0	0	0	0	0	0	0	0	0.008000002	0.036750011	0	0	0	0.002000001	0.015750005	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2018	4	MDV	0.125604	Aggregate	Aggregate	GAS	876188.8226	32040665.85	4042546.609	0.062871652	0	0.607073331	0.178527685	0.531248823	0.478895462	0.480651824	2.044416398	0	3.912971213	0.213226354	0	0.521702302	0.004752238	0	0.000961716	0.002434712	0	0.002523438	0.008000002	0.036750011	0.002243543	0	0.002324838	0.002000001	0.015750005	480.0251165	0	97.18413223	0.012466344	0	0.116117982	0.014258039	0	0.044742624
Los Angeles (SC)	2018	4	MDV		Aggregate	Aggregate	DSL	11707.10339	506720.8207	58056.40886	0.021152698	0	0	0	0	0	0	0.300269662	0	0	0.083135422	0	0	0.004040042	0	0	0.008551457	0	0	0.008000002	0.036750011	0.008181525	0	0	0.002000001	0.015750005	427.3550416	0	0	0.000982502	0	0	0.067174261	0	0	0
Los Angeles (SC)	2018	4	MDV		Aggregate	Aggregate	ELEC	545.0052675	18850.11602	2739.180271	0	0	0	0.004888026	0	0.007500233	0.022407439	0	0	0	0	0	0	0	0	0	0	0	0	0.008000002	0.036750011	0	0	0	0.002000001	0.015750005	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2018	5	LHDT1	0.017697	Aggregate	Aggregate	GAS	107338.7882	4057201.89	1599188.009	0.064284008	0.472606031	0.162251187	0.148803142	1.011105342	0.040469808	0.07041006	1.516913022	3.731358827	1.950839505	0.321404718	0.041262481	0.567256507	0.008361074	0.001225685	0.000195223	0.001583338	0	0.00056563	0.008000002	0.076440022	0.001458263	0	0.000522527	0.002000001	0.032760009	844.9104225	123.8589672	19.72779823	0.012485212	0.129815056	0.031749291	0.018693812	0.003254828	0.044468972
Los Angeles (SC)	2018	5	LHDT1		Aggregate	Aggregate	DSL	44862.62848	1981420.14	564315.4291	0.093893609	0.109759705	0	0	0	0	0	0.517701258	0.909745076	0	2.523756199	2.392654247	0	0.004685273	0.003106839	0	0.020326271	0.028530861	0	0.012000003	0.076440022	0.019446966	0.027296628	0	0.003000001	0.032760009	495.6074926	138.2372685	0	0.004361179	0.005098128	0	0.077902596	0.021728974	0	0
Los Angeles (SC)	2018	6	LHDT2	0.005953	Aggregate	Aggregate	GAS	17154.32044	620060.9911	255573.8147	0.047598895	0.474430308	0.15869286	0.142735488	1.01099082	0.036921159	0.06482403	1.188562555	3.737591387	1.981857869	0.336043095	0.041451298	0.572985374	0.009601367	0.001416333	0.000219809	0.001400636	0	0.000436195	0.008000002	0.089180026	0.0012879	0	0.000401126	0.002000001	0.038220011	970.2455995	143.1245495	22.21233206	0.01011126	0.130368456	0.031582575	0.020251163	0.003185058	0.043650937
Los Angeles (SC)	2018	6	LHDT2		Aggregate	Aggregate	DSL	18097.2275	772852.4144	227640.3556	0.091145369	0.109759705	0	0	0	0	0	0.49652775	0.909745076	0	2.37394945	2.405978112	0	0.005186609	0.00209023	0	0.020942533	0.029160005	0	0.012000003	0.089180026	0.020036569	0.027898556	0	0.003000001	0.038220011	548.638754	221.1042429	0	0.004233528	0.005098128	0	0.086238372	0.034754508	0	0
Los Angeles (SC)	2018	7	MHDT	0.01836	Aggregate	Aggregate	GAS	14396.12617	791158.0454	288037.6924	0.149589542	0.992461032	0.278445654	0.118498013	0.605718009	0.037004072	0.062266245	3.851381398	14.23841844	5.648096471	0.927564533	0.088409882	0.403388298	0.017449466	0.005550267	0.000421575	0.0012759	0	0.006055299	0.012000003	0.130340037	0.001175029	0	0.000606486	0.003000001	0.055860016	1763.318464	560.8703935	42.60141071	0.029263606	0.248480208	0.048202954	0.041602585	0.006717378	0.028248775
Los Angeles (SC)	2018	7	MHDT		Aggregate	Aggregate	DSL	60110.80545	3646765.829	586256.259	0.236853663	0.171871635	0	0	0	0	0	0.766765126	2.494653167	0	4.139673758	10.50516772	0.989863752	0.009921963	0.008533154	0	0.132050845	0.04897772	0	0.012000003	0.130340037	0.126338384	0.046858966	0	0.003000001	0.055860016	1050.220505	903.217756	0	0.011001239	0.007982992	0	0.165080038	0.141973253	0	0
Los Angeles (SC)	2018	8	HHDT	0.027618	Aggregate	Aggregate	GAS	79.23283967	5894.676941	1585.290656	1.184193876	0	0.000930233	0.330175788	1.480391394	0.089172766	0.131072864	53.32067059	0	4.419653693	6.639926284	0	1.058365815	0.022786322	0	0.000585488	0.002494107	0	0.002436219	0.020000006	0.061740018	0.002318661	0	0.002286335	0.005000001	0.026460008	2302.623058	0	59.16528552	0.195459072	0	0.000175671	0.196480183	0	0.031893549
Los Angeles (SC)	2018	8	HHDT		Aggregate	Aggregate	DSL	52041.15417	6221998.3	508253.128	0.220262376	4.69241902	0	0	0	0	0.814220738	48.73878275	0	5.591419123	65.09365183	1.372483711	0.015085663	0.101723076	0	0.090757877	0.222178423	0	0.035577992	0.061016256	0.086831732	0.212567083	0	0.008894498	0.026149824	1596.790267	10767.19036	0	0.010230617	0.217950071	0	0.250993193	1.692452383	0	0
Los Angeles (SC)	2018	8	HHDT		Aggregate	Aggregate	NG	1900.523466	77453.03375	7412.041519	0.583000451	0.108013051	0	0	0	0	0	12.16738493	19.12666324	0	5.455926832	28.06682507	0	0	0	0	0.010229981	0.081137669	0	0.03600001	0.061740018	0.009787437	0.077627689	0	0.009000003	0.026460008	3586.796413	4353.255106	0	0.647653496	1.411774302	0	7.731191913	0.887439531	0	0
Los Angeles (SC)	2018	9	OBUS	0.002341	Aggregate	Aggregate	GAS	4043.618232	184429.6522	80904.71359	0.0991632	0.742619813	0.185157997	0.030759232	0.348457247	0.025239037	0.052013402	2.529965503	5.747565498	3.647013963	0.730406072	0.064759556	0.340094744	0.017526843	0.003838459	0.000277586	0.000835577	0	0.000314599	0.012000003	0.130340037	0.00813323	0	0.00029127	0.003000001	0.055860016	1771.137628	387.8872494	28.05090075	0.02020518	0.194015309	0.033937839	0.033657796	0.005235407	0.025392845
Los Angeles (SC)	2018	9	OBUS		Aggregate	Aggregate	DSL	2873.307461	210110.921	28286.46963	0.306816604	1.812033335	0	0	0	0	0	1.015856834	14.81573714	0	5.280146642	30.40849121	1.113989929	0.01211079	0.029875934	0	0.147596683	0.193356114	0	0.012000003	0.130340037	0.141211716	0.184991614	0	0.003000001	0.055860016	1281.903676	3162.30968	0	0.014250837	0.084164255	0	0.201497406	0.497071044	0	0
Los Angeles (SC)	2018	10	SBUS	0.000667	Aggregate	Aggregate	GAS	975.8986724	42036.02377	3903.59469	0.086980635	10.57213551	0.343653967	0.08135931	0.657715911	0.018456686	0.038645161	1.945046934	81.82171241	8.429314518	0.52839883	0.921850164	0.58810051	0.008908756	0.026475772	0.000491982	0.001088307	0	0.000387607	0.008000002	0.744802024	0.001006659	0	0.000356391	0.002000001	0.319200087	900.2552676	2675.452557	49.71616952	0.01724019	2.399938125	0.059205615	0.028814188	0.084133706	0.053232704
Los Angeles (SC)	2018	10	SBUS		Aggregate	Aggregate	DSL	3336.476364	106131.8697	38502.47466	0.132574199	0.340777894	0	0	0	0	0	0.363100847	5.769580923	0	7.986567953	44.98451937	0.702417396	0.011942576	0.034660168	0	0.052466807	0.078659297	0	0.012000003	0.744802013	0.050197116	0.07525653	0	0.000357001	0.319200091	1264.098493	3668.711614	0	0.006157728	0.015828251	0	0.198698679	0.576670376	0	0
Los Angeles (SC)	2018	11	UBUS	0.002583	Aggregate	Aggregate	GAS	445.5711954	32229.7446	1782.284782	0.020130789	0	0.514108844	0.088695191	0.52491959	0.019877227	0.024788337	0.395906164	0	7.16828343	0.331037567	0	0.902797148	0.020956827	0	0.000890851	0.000397058	0	0.000160408	0.011341277	0.123561749	0.00365081	0	0.000147489	0.002835319	0.052955035	2117.747325	0	90.02301017	0.005991732	0	0.118646613	0.026778327	0	0.074707557
Los Angeles (SC)	2018	11	UBUS		Aggregate	Aggregate	DSL	31.4305	3221.377108	125.722	0.0080705	0	0	0	0	0	0	0.654281838	0	0	6.107544347	0	0	0.01700534	0	0	0.008980717	0	0	0.032210784	0.072570941	0.08592215	0	0	0.008052696	0.031101832	1798.82236	0	0	0.072856039	0	0	0.282749825	0	0	0
Los Angeles (SC)	2018	11	UBUS		Aggregate	Aggregate	ELEC	12	1070.403311	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.012000007	0.130340079	0	0	0	0.003000002	0.055860034	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2018	11	UBUS		Aggregate	Aggregate	NG	4012.38417	424964.4125	16049.53668	0.461364512	0	0	0	0	0	0	39.65369676	0	0	3.056261374	0	0	0	0	0	0.005212889	0	0	0.033480451	0.068677047	0.004987382	0	0	0.008370113	0.02943302	1965.246805	0	0	7.61030961	0	0	0.400628417	0	0	0
Los Angeles (SC)	2018	12	MCY	0.004804	Aggregate	Aggregate	GAS	147201.2937	1074478.73	294402.5874	2.730959248	0	1.868857664	0.742985151	2.429743905	1.410990593	2.250057132	20.80258616	0	8.409938491	1.138727208	0	0.262631473	0.002217485	0	0.000606509	0.002155168	0	0.003717294	0.004000001	0.011760003	0.002021772	0	0.00351796	0.001	0.005040001	224.0831644	0	61.28943279	0.390755189	0	0.240412949	0.065785843	0	0.015009232
Los Angeles (SC)	2018	13	MH	0.000944	Aggregate	Aggregate	GAS	18915.51119	186777.7259	1892.30774	0.130072245	0	0.171321536	0.111069405	2.767519249	0.065149306	1.164525848	3.808349043	0	3.340637436	0.606517141	0	0.315066226	0.017394526	0	0.000275889	0.00202536	0	0.000584627	0.012000003	0.130340037	0.001867388	0	0.000541746	0.003000001	0.055860016	1757.766694	0	27.8793767	0.025555544	0	0.036153781	0.033079779	0	0.031356561
Los Angeles (SC)	2018	13	MH		Aggregate	Aggregate	DSL	4631.581386	49488.17588	463.1581386	0.085158361	0	0	0	0	0	0	0.369743826	0	0	4.498567182	0	0	0.009549223	0	0	0.116416766	0	0	0.016000005	0.130340037	0.111380628	0	0	0.004000001	0.055860016	1010.115402	0	0	0.003955443	0	0	0.158776075	0	0	0
								6933431.057	274269847.4	34613731.89																																			

Table Y: Long Beach VMT

	Existing Base Year	2040 with Old Land Use Element	2040 with Proposed Land Use Element	Percent Change	
				From Old Land Use Element	From Existing
Citywide Peak Hour VMT	4,635,625	4,306,500	4,276,489		
Citywide Off-peak VMT	4,846,627	4,600,132	4,751,838		
Citywide Daily VMT	9,482,252	8,906,632	9,028,327		
City Population	466,255	484,485	484,485		
VMT per Capita	19.9	18	18.2		
City Households	163,794	175,500	192,318		
VMT per Household	56.9	49.9	46.1		
Employment	153,154	181,665	181,665		

Source: SCAG Regional Travel Demand Model

2018 Emission Factors

Running Exhaust (RUNEX) emissions
Idle Exhaust (IDLEX) emissions
Start Exhaust (STREX) emissions
Evaporative emissions include four major processes: hot soak, running loss, diurnal (both partial-day and multi-day diurnal), and resting loss

Mobile Operation Emission factors (grams per mile)

Fleet Mix	Percent Fleet mIx	Population per VMT	Trip per VMT	ROG (g/mile)	ROG (pop g/r	ROG (trips g/	CO (g/mile	CO (pop g/	CO (trips g	NOx (g/mi	NOx (pop	NOx (trips	SOx (g/mil	SOx (pop g	SOx (trips g/m	PM10 (g/n	PM10 (pop	PM10 (trip	PM25 (g/n	PM25 (pop	PM25 (trips g/mile)	CO2 (g/mil	CO2 (pop g	CO2 (trips	CH4 (g/mil	CH4 (pop g	CH4 (trips	N2O (g/mi	N2O (pop	N2O (trips
LDA	0.5554836	0.0248578	0.1170766	0.02459628	0.01691125	0.0874098	1.10213	0	0.283485	0.074708	0	0.029077	0.003033	0	7.03122E-05	0.046797	0.024858	0.000259	0.019632	0	0.000238	306.5382	0	7.105252	0.005714	0	0.008291	0.006879	0	0.003482
LDA	0.0037563	0.0247431	0.1152259	0.0359132	0	0	0.368666	0	0	0.168675	0	0	0.002276	0	0	0.064838	0.024743	0	0.036969	0	0	240.7276	0	0	0.001668	0	0	0.037839	0	0
LDA	0.0058606	0.0260963	0.1318314	0	0.00078048	0.0006444	0	0	0	0	0	0	0	0	0	0.04475	0.026096	0	0.01775	0	0	0	0	0	0	0	0	0	0	0
LDT1	0.0562133	0.0259274	0.1183117	0.06681679	0.03994707	0.2187354	2.41652	0	0.315205	0.218463	0	0.043505	0.003522	0	8.32139E-05	0.048422	0.025927	0.000411	0.021127	0	0.000378	355.8714	0	8.409001	0.01421	0	0.012374	0.014331	0	0.004071
LDT1	3.529E-05	0.0388278	0.1394456	0.24155385	0	0	1.321358	0	0	1.253808	0	0	0.004581	0	0	0.227098	0.038828	0	0.19221	0	0	484.59	0	0	0.01122	0	0	0.076171	0	0
LDT1	0.0001142	0.0313082	0.1486846	0	0.00093636	0.0007268	0	0	0	0	0	0	0	0	0	0.04475	0.031308	0	0.01775	0	0	0	0	0	0	0	0	0	0	0
LDT2	0.1835615	0.0253611	0.1183336	0.0393456	0.0214414	0.1336602	1.587051	0	0.372702	0.160078	0	0.05103	0.003929	0	9.35272E-05	0.04696	0.025361	0.000261	0.019783	0	0.00024	397.0612	0	9.451202	0.008732	0	0.011087	0.011312	0	0.00485
LDT2	0.000904	0.021327	0.1059648	0.02931429	0	0	0.195735	0	0	0.074508	0	0	0.003114	0	0	0.055932	0.021327	0	0.028448	0	0	329.4287	0	0	0.001362	0	0	0.051782	0	0
LDT2	0.0006268	0.0276472	0.1415267	0	0.00082686	0.0006918	0	0	0	0	0	0	0	0	0	0.04475	0.027647	0	0.01775	0	0	0	0	0	0	0	0	0	0	0
MDV	0.1168217	0.0273461	0.1261692	0.06287165	0.02623992	0.1661459	2.044416	0	0.493697	0.213226	0	0.065823	0.00475	0	0.000121339	0.047185	0.027346	0.000318	0.019994	0	0.000293	480.0251	0	12.26165	0.012466	0	0.014651	0.014258	0	0.005645
MDV	0.0018475	0.0231037	0.1145728	0.0211527	0	0	0.30027	0	0	0.083135	0	0	0.00404	0	0	0.053301	0.023104	0	0.025932	0	0	427.355	0	0	0.000983	0	0	0.067174	0	0
MDV	6.873E-05	0.0289126	0.1453137	0	0.00086471	0.0007103	0	0	0	0	0	0	0	0	0	0.04475	0.028913	0	0.01775	0	0	0	0	0	0	0	0	0	0	0
LHDT1	0.0147927	0.0264564	0.3941603	0.06428401	0.01543691	0.5211429	1.516913	0.098718	0.768944	0.321405	0.001092	0.22359	0.008361	3.24E-05	7.69492E-05	0.086023	0.026456	0.000223	0.036218	0	0.000206	844.9104	3.276857	7.775915	0.012485	0.003434	0.012514	0.018694	8.61E-05	0.017528
LHDT1	0.0072243	0.0226417	0.2848035	0.09389361	0.00248514	0	0.517701	0.020598	0	2.523756	0.054174	0	0.004685	2.96E-05	0	0.108766	0.051173	0	0.055207	0.000618	0	495.6075	3.12992	0	0.004361	0.000115	0	0.077903	0.000492	0
LHDT2	0.0022608	0.0276655	0.4121753	0.0475989	0.0159402	0.5409467	1.184563	0.103402	0.816873	0.336043	0.001147	0.23617	0.009601	3.92E-05	9.05998E-05	0.098581	0.027666	0.00018	0.041508	0	0.000165	970.2456	3.959618	9.155374	0.010111	0.003607	0.013018	0.020251	8.81E-05	0.017992
LHDT2	0.0028179	0.0234161	0.2945457	0.09114537	0.00257015	0	0.496528	0.021303	0	2.373949	0.056339	0	0.005187	4.89E-05	0	0.122123	0.052576	0	0.061257	0.000653	0	548.6388	5.17741	0	0.004234	0.000119	0	0.086238	0.000814	0
MHDT	0.0028846	0.0181963	0.364071	0.14958954	0.01986544	0.36504	3.851381	0.258722	2.056308	0.927565	0.001609	0.146862	0.017449	0.000101	0.000153483	0.143616	0.018196	0.000239	0.060035	0	0.000221	1763.318	10.20575	15.50994	0.029264	0.004521	0.017549	0.041603	0.000122	0.010285
MHDT	0.0132963	0.0164833	0.1607606	0.23685366	0.00283302	0	0.766765	0.04112	0	4.139674	0.17316	0.159131	0.009922	0.000141	0	0.274391	0.065461	0	0.185198	0.000772	0	1050.221	14.88803	0	0.011001	0.000132	0	0.16508	0.00234	0
HHDT	2.149E-05	0.0134414	0.268936	1.18419388	0.00296041	0.4871768	53.32067	0	1.188604	6.639926	0	0.284633	0.022786	0	0.000157459	0.084234	0.013441	0.000655	0.033779	0	0.000615	2302.623	0	15.91167	0.195459	0	4.72E-05	0.19648	0	0.008577
HHDT	0.0226857	0.0083641	0.0816865	0.22026238	0.03924766	0	0.814221	0.407654	0	5.591419	0.544447	0.112113	0.015086	0.000851	0	0.187352	0.230542	0	0.121876	0.001778	0	1596.79	90.0574	0	0.010231	0.001823	0	0.250993	0.014156	0
HHDT	0.0002824	0.0245378	0.0956972	0.58300045	0.0026504	0	12.36738	0.469325	0	5.455927	0.688697	0	0	0	0	0.10797	0.105675	0	0.045247	0.001905	0	3586.796	106.8191	0	6.047653	0.034642	0	0.731192	0.021776	0
OBUS	0.0006724	0.021925	0.4386752	0.0991632	0.01797569	0.2475771	2.52997	0.126015	1.599855	0.730406	0.00142	0.149191	0.017527	8.42E-05	0.00012177	0.143224	0.021925	0.000138	0.059673	0	0.000128	1771.138	8.504424	12.30523	0.020205	0.004254	0.014888	0.033658	0.000115	0.011139
OBUS	0.0007661	0.0136752	0.1346264	0.3068166	0.02477991	0	1.015857	0.202608	0	5.280147	0.415842	0.149972	0.012111	0.000409	0	0.289937	0.207031	0	0.200072	0.00253	0	1281.904	43.2452	0	0.014251	0.001151	0	0.201497	0.006798	0
SBUS	0.0001533	0.0232158	0.0928631	0.08698064	0.24676593	0.1005456	1.945047	1.899554	0.782772	0.528399	0.021401	0.054613	0.008909	0.000615	4.5687E-05	0.753889	0.023216	3.6E-05	0.322201	0	3.31E-05	900.2553	62.11269	4.616797	0.01724	0.055716	0.005498	0.028814	0.001953	0.004943
SBUS	0.000387	0.0314371	0.3627796	0.1325742	0.01071306	0	0.3631	0.181379	0	7.986568	1.414182	0.254823	0.011943	0.00109	0	0.809267	0.110096	0	0.372397	0.002366	0	1264.098	115.3336	0	0.006158	0.000498	0	0.198699	0.018129	0
UBUS	0.0001175	0.0138248	0.0552994	0.02013079	0.00061749	0.0624177	0.395906	0	0.396402	0.331038	0	0.049924	0.020957	0	4.92635E-05	0.1353	0.013825	8.87E-06	0.056155	0	8.16E-06	2117.747	0	4.978216	0.005992	0	0.006561	0.026778	0	0.004131
UBUS	1.175E-05	0.0097569	0.0390274	0.00807105	0	0	0.654282	0	0	6.107544	0	0	0.017005	0	0	0.113762	0.009757	0	0.047747	0	0	1798.822	0	0	0.072856	0	0	0.28275	0	0
UBUS	3.903E-06	0.0112107	0.0448429	0	0	0	0	0	0	0	0	0	0	0	0	0.14234	0.011211	0	0.05886	0	0	0	0	0	0	0	0	0	0	0
UBUS	0.0015494	0.0094417	0.0377668	0.46136451	0	0	39.6537	0	0	3.056261	0	0	0	0	0	0.10737	0.009442	0	0.042791	0	0	1965.247	0	0	7.61031	0	0	0.400628	0	0
MCY	0.0039176	0.1369979	0.2739957	2.73095925	0.50155573	1.3813732	20.80259	0	2.304287	1.138727	0	0.07196	0.002217	0	0.000166181	0.017915	0.136998	0.001019	0.008062	0	0.000964	224.0832	0	16.79304	0.390755	0	0.065872	0.065786	0	0.004112
MH	0.000681	0.1012728	0.0101313	0.13007225	0.02325986	0.0308997	3.808349	0	0.033845	0.606517	0	0.003192	0.017395	0	2.79512E-06	0.144365	0.101273	5.92E-06	0.060727	0	5.49E-06	1757.767	0	0.282455	0.025556	0	0.000366	0.03308	0	0.000318
MH	0.0001804	0.0935897	0.009359	0.08515836	0	0	0.369744	0	0	4.498567	0	0	0.009549	0	0	0.262757	0.09359	0	0.171241	0	0	1010.115	0	0	0.003955	0	0	0.158776	0	0

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Year: 2040
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Y	Fleet	Vehicle Ca	Fleet Mix	Model Yea	Speed	Fuel	Population	VMT	Trips	ROG_RUN	ROG_IDLE	ROG_STRE	ROG_HOT	ROG_RUN	ROG_REST	ROG_DIUR	CO_RUNE	CO_IDLEX	CO_STREX	NOx_RUNI	NOx_IDLE	NOx_STRE	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	PM2_5_RU	PM2_5_ID	PM2_5_ST	PM2_5_PA	PM2_5_PA	SOx_RUNE	SOx_IDLEX	SOx_STREX	CO2_RUNI	CO2_IDLE	CO2_STRE	CH4_RUNI	CH4_IDLE	CH4_STRE	N2O_RUN	N2O_IDLE	N2O_STRE
								vehicle/day	miles/day	trips/day	g/mile	g/vehicle/	g/trip	g/trip	g/trip	g/vehicle/	g/vehicle/	g/mile	g/vehicle/	g/trip	g/mile	g/vehicle/	g/trip	g/mile	g/vehicle/	g/trip	g/mile	g/vehicle/	g/trip	g/mile	g/mile	g/mile	g/vehicle/	g/trip	g/mile	g/mile	g/vehicle/	g/trip	g/mile	g/vehicle/	g/trip	g/mile	g/vehicle/	g/trip
Los Angeles (SC)	2040	1	LDA	Aggregate	Aggregate	Aggregate	GAS	4511637.789	145306717	21219692.53	0.002392	0	0.071858	0.039613	0.150402	0.092009	0.08275	0.433368	0	1.401989	0.017713	0	0.1119	0.000719	0	0.000795	0.008	0.03675	0.000661	0	0.000731	0.002	0.01575	0.002045	0	0.000391	206.6797	0	39.55817	0.000832	0	0.019453	0.002971	0	0.01821
Los Angeles (SC)	2040	1	LDA	Aggregate	Aggregate	Aggregate	DSL	54923.69295	1796808.696	260091.2186	0.006867	0	0	0	0	0	0	0.220631	0	0	0.010923	0	0	0.000948	0	0	0.008	0.03675	0.000907	0	0	0.002	0.01575	0.001582	0	0	167.3762	0	0	0.000319	0	0	0.026309	0	0
Los Angeles (SC)	2040	1	LDA	Aggregate	Aggregate	Aggregate	ELEC	281436.9382	9539230.562	1344160.259	0	0	0	0.004888	0	0.0075	0.022407	0	0	0	0	0	0	0	0	0	0.008	0.03675	0	0	0	0.002	0.01575	0	0	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2040	2	LDT1	Aggregate	Aggregate	Aggregate	GAS	649445.5765	20089669.21	2990344.755	0.003319	0	0.081572	0.055719	0.213946	0.156805	0.136455	0.463034	0	1.46444	0.021252	0	0.12627	0.000821	0	0.000895	0.008	0.03675	0.000755	0	0.000823	0.002	0.01575	0.002395	0	0.000459	242.0111	0	46.43309	0.001062	0	0.021558	0.003274	0	0.019844
Los Angeles (SC)	2040	2	LDT1	Aggregate	Aggregate	Aggregate	DSL	97.53124475	2917.012946	437.3508005	0.025916	0	0	0	0	0	0	0.273651	0	0	0.109591	0	0	0.007508	0	0	0.008	0.03675	0.007183	0	0	0.002	0.01575	0.003166	0	0	334.9381	0	0	0.001204	0	0	0.052648	0	0
Los Angeles (SC)	2040	2	LDT1	Aggregate	Aggregate	Aggregate	ELEC	23244.64488	768818.2864	110130.5169	0	0	0	0.004888	0	0.0075	0.022407	0	0	0	0	0	0	0	0	0	0.008	0.03675	0	0	0	0.002	0.01575	0	0	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2040	3	LDT2	Aggregate	Aggregate	Aggregate	GAS	1760938.021	55924271.53	8210949.171	0.004052	0	0.101659	0.050029	0.196503	0.182159	0.160439	0.522906	0	1.848981	0.021216	0	0.122924	0.000755	0	0.000815	0.008	0.03675	0.000695	0	0.00075	0.002	0.01575	0.002364	0	0.000463	238.9023	0	46.82457	0.001278	0	0.026261	0.003162	0	0.019494
Los Angeles (SC)	2040	3	LDT2	Aggregate	Aggregate	Aggregate	DSL	17747.64845	572083.9238	83613.49197	0.022193	0	0	0	0	0	0	0.228287	0	0	0.036435	0	0	0.004824	0	0	0.008	0.03675	0.004615	0	0	0.002	0.01575	0.00211	0	0	223.2351	0	0	0.001031	0	0	0.035089	0	0
Los Angeles (SC)	2040	3	LDT2	Aggregate	Aggregate	Aggregate	ELEC	76658.99621	1778280.731	364862.0627	0	0	0	0.004888	0	0.0075	0.022407	0	0	0	0	0	0	0	0	0	0.008	0.03675	0	0	0	0.002	0.01575	0	0	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2040	4	LHDT1	Aggregate	Aggregate	Aggregate	GAS	115739.8696	3728884.993	1724351.604	0.003699	0.285527	0.044556	0.056074	0.277503	0.021278	0.026978	0.123966	3.781397	1.35526	0.033018	0.02486	0.289111	0.00126	0	0.000328	0.008	0.07644	0.001158	0	0.000302	0.002	0.03276	0.006632	0.000996	0.000156	670.1331	100.698	15.79387	0.001174	0.088787	0.010317	0.003326	0.002566	0.029075
Los Angeles (SC)	2040	4	LHDT1	Aggregate	Aggregate	Aggregate	DSL	131177.3629	4216123.08	1650046.204	0.043051	0.10976	0	0	0	0	0	0.201377	0.909745	0	0.097256	0.919986	0	0.005889	0.02757	0	0.012	0.07644	0.005634	0.026377	0	0.003	0.03276	0.00364	0.001014	0	385.0249	107.2893	0	0.002	0.005098	0	0.060521	0.016864	0
Los Angeles (SC)	2040	5	LHDT2	Aggregate	Aggregate	Aggregate	GAS	21029.42599	651643.9642	313307.1134	0.00367	0.28552	0.041872	0.053059	0.267872	0.0214	0.026744	0.123409	3.781397	1.347126	0.037546	0.024859	0.287699	0.001248	0	0.00032	0.008	0.08918	0.001147	0	0.000294	0.002	0.03822	0.007624	0.00115	0.000179	770.389	116.1827	18.04602	0.001163	0.088765	0.009854	0.003767	0.002529	0.028594
Los Angeles (SC)	2040	5	LHDT2	Aggregate	Aggregate	Aggregate	DSL	53164.37395	1647325.674	668740.9435	0.044198	0.10976	0	0	0	0	0	0.209259	0.909745	0	0.139514	0.943933	0	0.012695	0.027542	0	0.012	0.08918	0.012146	0.026351	0	0.003	0.03822	0.004028	0.001645	0	426.1252	173.9899	0	0.002053	0.005098	0	0.066981	0.027349	0
Los Angeles (SC)	2040	6	MDV	Aggregate	Aggregate	Aggregate	GAS	1125880.132	33637564.39	5214657.977	0.004522	0	0.111277	0.071349	0.213637	0.279044	0.245461	0.533817	0	1.905331	0.024222	0	0.134885	0.000796	0	0.000856	0.008	0.03675	0.000732	0	0.000787	0.002	0.01575	0.00289	0	0.000567	292.0769	0	57.25124	0.001395	0	0.027936	0.003366	0	0.020393
Los Angeles (SC)	2040	6	MDV	Aggregate	Aggregate	Aggregate	DSL	39448.00408	1198600.41	185083.4525	0.007935	0	0	0	0	0	0	0.249629	0	0	0.012511	0	0	0.00118	0	0	0.008	0.03675	0.001129	0	0	0.002	0.01575	0.002733	0	0	289.0924	0	0	0.000369	0	0	0.045441	0	0
Los Angeles (SC)	2040	6	MDV	Aggregate	Aggregate	Aggregate	ELEC	55296.48697	1285484.505	263391.6063	0	0	0	0.004888	0	0.0075	0.022407	0	0	0	0	0	0	0	0	0	0.008	0.03675	0	0	0	0.002	0.01575	0	0	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2040	7	MHDT	Aggregate	Aggregate	Aggregate	GAS	17873.30335	869071.9124	357609.0535	0.010384	1.016311	0.14849	0.051448	0.249595	0.019993	0.024961	0.206351	14.50839	2.849581	0.089947	0.090188	0.328562	0.001242	0	0.000425	0.012	0.13034	0.001142	0	0.000391	0.003	0.05586	0.013398	0.004419	0.000298	1353.933	446.5553	30.10287	0.002813	0.275994	0.031094	0.008425	0.008554	0.030937
Los Angeles (SC)	2040	7	MHDT	Aggregate	Aggregate	Aggregate	DSL	94581.62172	5348750.502	977486.7381	0.007495	0.062086	0	0	0	0	0	0.077746	2.611933	0	1.221829	3.687528	2.166663	0.007064	0.001011	0	0.012	0.13034	0.006758	0.000967	0	0.003	0.05586	0.007039	0.006035	0	745.0433	638.839	0	0.000348	0.002884	0	0.11711	0.100417	0
Los Angeles (SC)	2040	8	HHDT	Aggregate	Aggregate	Aggregate	GAS	68.58246815	8054.503843	1372.198023	0.341674	0	0.001272	0.049465	0.243917	0.019848	0.024778	30.90701	0	4.572851	3.094957	0	0.214824	0.001249	0	0.000433	0.02	0.06174	0.001148	0	0.000398	0.005	0.02646	0.015663	0	0.000353	1582.787	0	35.63927	0.076404	0	0.000244	0.133562	0	0.009835
Los Angeles (SC)	2040	8	HHDT	Aggregate	Aggregate	Aggregate	DSL	64899.24031	8952525.175	676354.1908	0.01895	4.962156	0	0	0	0	0	0.222289	73.24138	0	2.425144	59.16406	2.403823	0.017168	0.021936	0	0.035643	0.061127	0.016425	0.020987	0	0.008911	0.026197	0.009626	0.090049	0	1018.889	9531.5	0	0.00088	0.230479	0	0.160155	1.498219	0
Los Angeles (SC)	2040	8	HHDT	Aggregate	Aggregate	Aggregate	NG	4817.341871	196383.0654	18787.6333	0.090394	0.022332	0	0	0	0	0	14.53433	21.95066	0	0.713243	18.38627	0	0.003479	0.01103	0	0.036	0.06174	0.003328	0.010553	0	0.009	0.02646	0	0	0	2670.772	3129.953	0	4.110049	1.17376	0	0.544454	0.638061	0
Los Angeles (SC)	2040	9	OBUS	Aggregate	Aggregate	Aggregate	GAS	4148.443919	140892.0542	83002.06593	0.015626	0.750019	0.124854	0.029196	0.325371	0.026107	0.043197	0.334738	5.797197	2.461748	0.131699	0.065312	0.293915	0.001229	0	0.000295	0.012	0.13034	0.00113	0	0.000271	0.003	0.05586	0.013529	0.003159	0.000215	1367.094	319.1768	21.68815	0.003787	0.197905	0.024654	0.009957	0.005689	0.02479
Los Angeles (SC)	2040	9	OBUS	Aggregate	Aggregate	Aggregate	DSL	4684.031544	316235.4552	45097.75702	0.010877	0.830798	0	0	0	0	0	0.117773	13.36639	0	1.592352	11.63993	2.225039	0.010583	0.003939	0	0.012	0.13034	0.010125	0.003769	0	0.003	0.05586	0.008792	0.020157	0	930.6537	2133.58	0	0.000505	0.038588	0	0.146286	0.335369	0
Los Angeles (SC)	2040	10	SBUS	Aggregate	Aggregate	Aggregate	GAS	2952.278923	101534.1765	11809.11569	0.01191	10.64152	0.285389	0.080081	0.515087	0.024076	0.03957	0.210384	82.24088	6.31762	0.122865	0.92653	0.531753	0.001489	0	0.000675	0.008	0.7448	0.001369	0	0.000621	0.002	0.3192	0.007218	0.021857	0.000392	729.4474	2208.737	39.58863	0.002669	2.384646	0.049772	0.01173	0.093519	0.050629
Los Angeles (SC)	2040	10	SBUS	Aggregate	Aggregate	Aggregate	DSL	4158.729987	132393.1093	47991.16746	0.019097	0.270203	0	0	0	0	0	0.145836	11.05162	0	1.996175	16.48744	2.062421	0.00581	0.004501	0	0.012	0.7448	0.005558	0.004306	0	0.003	0.3192	0.008877	0.02731	0	939.6143	2890.754	0	0.000887	0.01255	0	0.147694	0.454386	0
Los Angeles (SC)	2040	11	UBUS	Aggregate	Aggregate	Aggregate	GAS	510.3963623	36492.94024	2041.585449	0.019557	0	0.37719	0.028538	0.147356	0.00786	0.011026	0.292331	0	7.107423	0.196019	0	0.669451	0.002203	0	0.000877	0.011341	0.123562	0.002025	0	0.000806	0.002835	0.052955	0.015496	0	0.000685	1565.947	0	69.2208	0.005937	0	0.089338	0.018334	0	0.064328
Los Angeles (SC)	2040	11	UBUS	Aggregate	Aggregate	Aggregate	DSL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Los Angeles (SC)	2040	11	UBUS	Aggregate	Aggregate	Aggregate	ELEC																																						
Los Angeles (SC)	2040	11	UBUS	Aggregate	Aggregate	Aggregate	NG	4592.391973	486036.1381	18369.56789	0.090543	0	0	0	0	0	0	49.02151	0	0	0.482866	0	0	0.003364	0	0	0.033417	0.06886	0.003218	0	0	0.008354	0.029511	0	0	0	1993.862	0	0	6.314386	0	0	0.406462	0	0
Los Angeles (SC)	2040	12	MCY	Aggregate	Aggregate	Aggregate	GAS	271849.9913	1457519.238	543699.9826	2.564542	0	1.732458	0.63089	1.188505	1.323746	2.245629	17.71919	0	8.778936	1.130831	0	0.263331	0.002793	0	0.002991	0.004	0.01176	0.002603	0	0.00279	0.001	0.00504	0.002226	0	0.000561	224.976	0	56.71037	0.376412	0	0.224095	0.065058	0	0.014944
Los Angeles (SC)	2040	13	MH	Aggregate	Aggregate	Aggregate	GAS	22254.20405	203103.4462	2226.310573	0.009864	0	0.096876	0.021366	0.252067	0.021826	0.036498	0.171519	0	2.10791	0.100204	0	0.324542	0.001233	0	0.000313	0.012	0.13034	0.001133	0	0.000288	0.003	0.05586	0.013534	0	0.000202	1367.654	0	20.42577	0.003528	0	0.027129	0.012071	0	0.038698
Los Angeles (SC)	2040	13	MH	Aggregate	Aggregate	Aggregate	DSL	10387.72885	86657.62257	1038.772885	0.047921	0	0	0	0	0	0	0.146552	0	0	2.219768	0	0	0.023754	0	0	0.016	0.13034	0.022726	0	0	0.004	0.05586	0.007642	0	0	808.3893	0	0	0.002226	0	0	0.127068	0	0

2018 Existing Emissions Data
Mobile Operation Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10	PM2.5
Total	4,123.08	38,621.78	8,474.29	84.66	1,826.78	540.95

Mobile Operation Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10	PM2.5
LDA	1,497.00	16,089.85	1,205.16	36.04	835.06	230.74
LDA	2.82	28.95	13.24	0.18	7.03	2.90
LDA	0.17	0.00	0.00	0.00	8.68	2.17
LDT1	382.50	3,210.07	307.84	4.24	87.85	25.27
LDT1	0.18	0.97	0.92	0.00	0.20	0.14
LDT1	0.00	0.00	0.00	0.00	0.18	0.04
LDT2	746.14	7,520.06	810.07	15.44	278.51	76.83
LDT2	0.55	3.70	1.41	0.06	1.46	0.54
LDT2	0.02	0.00	0.00	0.00	0.95	0.23
MDV	623.36	6,198.30	681.46	11.90	182.79	49.54
MDV	0.82	11.60	3.21	0.16	2.95	1.00
MDV	0.00	0.00	0.00	0.00	0.11	0.03
LHDT1	185.81	737.39	168.87	2.62	34.85	11.26
LHDT1	14.56	81.29	389.32	0.71	24.15	8.43
LHDT2	28.57	99.47	27.10	0.46	5.97	1.97
LHDT2	5.52	30.50	143.16	0.31	10.29	3.65
MHDT	32.23	371.84	64.89	1.07	9.77	3.63
MHDT	66.62	224.55	1,242.99	2.80	94.46	51.69
HHDT	0.75	24.49	3.11	0.01	0.04	0.02
HHDT	123.07	579.45	2,962.99	7.56	198.18	58.64
HHDT	3.46	75.78	36.27	0.00	1.26	0.28
OBUS	5.13	59.82	12.38	0.25	2.32	0.84
OBUS	5.31	19.51	93.62	0.20	7.96	3.24
SBUS	1.39	14.83	1.94	0.03	2.49	1.03
SBUS	1.16	4.40	78.11	0.11	7.44	3.03
UBUS	0.20	1.95	0.94	0.05	0.37	0.14
UBUS	0.00	0.16	1.50	0.00	0.03	0.01
UBUS	0.00	0.00	0.00	0.00	0.01	0.00
UBUS	14.94	1,284.39	98.99	0.00	3.78	1.39
MCY	377.86	1,892.34	99.15	0.20	12.77	0.74
MH	2.62	54.70	8.68	0.25	3.50	0.86
MH	0.32	1.39	16.97	0.04	1.34	0.65

Mobile Operation Emissions (MT per day)

	CO2	CH4	N20	CO2e
Total	3,945.68	0.31	0.22	4,019.62

Mobile Operation Emissions (MT per day)

	CO2	CH4	N20	CO2e
LDA	1,652.0340	0.0738	0.0546	1,669.98
LDA	8.5742	0.0001	0.0013	8.97
LDA	0.0000	0.0000	0.0000	0.00
LDT1	194.1719	0.0142	0.0098	197.42
LDT1	0.1622	0.0000	0.0000	0.17
LDT1	0.0000	0.0000	0.0000	0.00
LDT2	707.5659	0.0345	0.0281	716.73
LDT2	2.8238	0.0000	0.0004	2.95
LDT2	0.0000	0.0000	0.0000	0.00
MDV	545.3221	0.0300	0.0220	552.58
MDV	7.4867	0.0000	0.0012	7.83
MDV	0.0000	0.0000	0.0000	0.00
LHDT1	120.0646	0.0040	0.0051	121.67
LHDT1	34.1650	0.0003	0.0054	35.76
LHDT2	21.0805	0.0006	0.0008	21.34
LHDT2	14.7977	0.0001	0.0023	15.49
MHDT	48.9345	0.0014	0.0014	49.39
MHDT	134.2874	0.0014	0.0211	140.55
HHDT	0.4725	0.0000	0.0000	0.49
HHDT	362.8601	0.0026	0.0570	379.75
HHDT	9.8906	0.0163	0.0020	10.89
OBUS	11.4259	0.0003	0.0003	11.52
OBUS	9.6260	0.0001	0.0015	10.08
SBUS	1.4053	0.0001	0.0001	1.42
SBUS	5.0615	0.0000	0.0008	5.30
UBUS	2.3653	0.0000	0.0000	2.38
UBUS	0.2003	0.0000	0.0000	0.21
UBUS	0.0000	0.0000	0.0000	0.00
UBUS	28.8737	0.1118	0.0059	33.41
MCY	8.9480	0.0170	0.0026	10.14
MH	11.3524	0.0002	0.0002	11.42
MH	1.7282	0.0000	0.0003	1.81

2040 Emission Factors

Running Exhaust (RUNEX) emissions
Idle Exhaust (IDLEX) emissions
Start Exhaust (STREX) emissions
Evaporative emissions include four major processes: hot soak, running loss, diurnal (both partial-day and multi-day diurnal), and resting loss
Mobile Operation Emission factors (grams per mile)

Fleet Mix	Percent Fleet mIx	Population per VMT	Trip per VMT	ROG (g/mile)	ROG (pop g/r	ROG (trips g/	CO (g/mile	CO (pop g/	CO (trips g	NOx (g/mi	NOx (pop	NOx (trips	SOx (g/mil	SOx (pop g	SOx (trips g/m	PM10 (g/n	PM10 (pop	PM10 (trips g/	PM25 (g/n	PM25 (pop	PM25 (trips g/mile)	CO2 (g/mil	CO2 (pop g	CO2 (trips	CH4 (g/mil	CH4 (pop g	CH4 (trips	N2O (g/mi	N2O (pop	N2O (trips
LDA	0.4835819	0.0310491	0.1460338	0.00239225	0.0054261	0.0382423	0.433368	0	0.204738	0.017713	0	0.016341	0.000719	0	0.000116148	0.008731	0.067799	9.65707E-05	0.002391	0.000489	0.000299	206.6797	0	5.77683	0.000832	0	0.002841	0.002971	0	0.002659
LDA	0.0059798	0.0305674	0.1447518	0.00686682	0	0	0.220631	0	0	0.010923	0	0	0.000948	0	0	0.008	0.067317	0.000131267	0.002	0.000481	0.000229	167.3762	0	0	0.000319	0	0	0.026309	0	0
LDA	0.0317466	0.0295031	0.1409087	0	0.00088237	0.0006888	0	0	0	0	0	0	0	0	0	0.008	0.066253	0	0.002	0.000465	0	0	0	0	0	0	0	0	0	0
LDT1	0.0668586	0.0323273	0.1488499	0.00331918	0.00948029	0.0522815	0.463034	0	0.217982	0.021252	0	0.018795	0.000821	0	0.000133226	0.008823	0.069077	0.000112411	0.002459	0.000509	0.000356	242.0111	0	6.91156	0.001062	0	0.003209	0.003274	0	0.002954
LDT1	9.708E-06	0.0334353	0.149931	0.02591626	0	0	0.273651	0	0	0.109591	0	0	0.007508	0	0	0.008	0.070185	0.001076974	0.002	0.000527	0.000475	334.9381	0	0	0.001204	0	0	0.052648	0	0
LDT1	0.0025586	0.0302343	0.1432465	0	0.00090424	0.0007002	0	0	0	0	0	0	0	0	0	0.008	0.066984	0	0.002	0.000476	0	0	0	0	0	0	0	0	0	0
LDT2	0.1861164	0.0314879	0.1468226	0.00405197	0.0107877	0.0511222	0.522906	0	0.271472	0.021216	0	0.018048	0.000755	0	0.000119718	0.00875	0.068238	0.00010199	0.002463	0.000496	0.000347	238.9023	0	6.874907	0.001278	0	0.003856	0.003162	0	0.002862
LDT2	0.0019039	0.0310228	0.146156	0.02219299	0	0	0.228287	0	0	0.036435	0	0	0.004824	0	0	0.008	0.067773	0.000674518	0.002	0.000489	0.000308	223.2351	0	0	0.001031	0	0	0.035089	0	0
LDT2	0.0059181	0.0431085	0.2051769	0	0.00128927	0.0010029	0	0	0	0	0	0	0	0	0	0.008	0.079859	0	0.002	0.000679	0	0	0	0	0	0	0	0	0	0
MDV	0.0124098	0.0310387	0.4624309	0.00369886	0.0103602	0.1748602	0.123966	0.11737	0.626714	0.033018	0.000772	0.133694	0.00126	0	0.000151693	0.008302	0.107479	0.000535591	0.003153	0.001017	0.003067	670.1331	3.12554	7.303574	0.001174	0.002756	0.004771	0.003326	7.96E-05	0.013445
MDV	0.0140313	0.0311133	0.3913658	0.04305106	0.00341498	0	0.201377	0.028305	0	0.097256	0.028624	0	0.005889	0.000858	0	0.038377	0.107553	0.002205001	0.004014	0.001019	0.001425	385.0249	3.338121	0	0.002	0.000159	0	0.060521	0.000525	0
MDV	0.0021687	0.0322713	0.4807949	0.00366971	0.01076778	0.1744339	0.123409	0.122031	0.647691	0.037546	0.000802	0.138324	0.001248	0	0.000153862	0.008294	0.121451	0.00055154	0.003328	0.001233	0.003665	770.389	3.749371	8.676435	0.001163	0.002865	0.004738	0.003767	8.16E-05	0.013748
LHDT1	0.0054823	0.0322731	0.4059555	0.04419822	0.00354229	0	0.209259	0.02936	0	0.139514	0.030464	0	0.012695	0.000889	0	0.038351	0.121453	0.004930847	0.004645	0.001233	0.001635	426.1252	5.615202	0	0.002053	0.000165	0	0.066981	0.000883	0
LHDT1	0.1119461	0.0334709	0.1550248	0.00452153	0.01755567	0.0614306	0.533817	0	0.295374	0.024222	0	0.020911	0.000796	0	0.000132666	0.008787	0.070221	0.000113501	0.002567	0.000527	0.000448	292.0769	0	8.875364	0.001395	0	0.004331	0.003366	0	0.003161
LHDT2	0.003989	0.0329117	0.1544163	0.007935	0	0	0.249629	0	0	0.012511	0	0	0.00118	0	0	0.008	0.069662	0.00017433	0.002	0.000518	0.000422	289.0924	0	0	0.000369	0	0	0.045441	0	0
LHDT2	0.0042781	0.0430161	0.2048968	0	0.00128651	0.0010015	0	0	0	0	0	0	0	0	0	0.008	0.079766	0	0.002	0.000678	0	0	0	0	0	0	0	0	0	0
MHDT	0.0028923	0.020566	0.4114838	0.01038415	0.02182594	0.1849757	0.206351	0.298379	1.172557	0.089947	0.001855	0.135198	0.001242	0	0.000174812	0.012391	0.150906	0.000470041	0.007717	0.001149	0.005513	1353.933	9.183842	12.38685	0.002813	0.005676	0.012794	0.008425	0.000176	0.01273
MHDT	0.0178007	0.0176829	0.1827505	0.00749491	0.00109787	0	0.077746	0.046187	0	1.221829	0.065206	0.395959	0.007064	1.79E-05	0	0.012967	0.148023	0.001235058	0.009035	0.000988	0.001286	745.0433	11.29655	0	0.000348	5.1E-05	0	0.11711	0.001776	0
HHDT	2.681E-05	0.0085148	0.1703641	0.34167428	0.00037998	0.0501984	30.90701	0	0.779049	3.094957	0	0.036598	0.001249	0	7.37528E-05	0.020398	0.070255	0.000195646	0.005353	0.000225	0.002668	1582.787	0	6.071651	0.076404	0	4.15E-05	0.133562	0	0.001676
HHDT	0.0297941	0.0072493	0.075549	0.01894967	0.03597199	0	0.222289	0.530946	0	2.425144	0.428896	0.181606	0.017168	0.000159	0	0.05663	0.068377	0.001240892	0.09896	0.00019	0.000727	1018.889	69.09638	0	0.00088	0.001671	0	0.160155	0.010861	0
HHDT	0.0006536	0.0245303	0.0956683	0.0903939	0.00054782	0	14.53433	0.538457	0	0.713243	0.451021	0	0.003479	0.000271	0	0.046553	0.08627	0.000318402	0.009	0.000649	0	2670.772	76.7788	0	4.110049	0.028793	0	0.544454	0.015652	0
OBUS	0.0004689	0.0294441	0.5891181	0.01562569	0.02412426	0.2824357	0.334738	0.170693	1.45026	0.131699	0.001923	0.173151	0.001229	0	0.000173798	0.012271	0.159784	0.000665477	0.006373	0.001645	0.00797	1367.094	9.397883	12.77688	0.003787	0.005827	0.014524	0.009957	0.000168	0.014604
OBUS	0.0010524	0.0148118	0.1426082	0.0108771	0.01230565	0	0.117773	0.197981	0	1.592352	0.172409	0.317309	0.010583	5.83E-05	0	0.015769	0.145152	0.001443909	0.023157	0.000827	0.001254	930.6537	31.60226	0	0.000505	0.000572	0	0.146286	0.004967	0
SBUS	0.0003379	0.0290767	0.1163068	0.01191047	0.31127086	0.1024148	0.210384	2.391293	0.734782	0.122865	0.02694	0.061847	0.001489	0	7.85108E-05	0.008621	0.773877	0.000159238	0.024249	0.009281	0.00084	729.4474	64.22278	4.604427	0.002669	0.069338	0.005789	0.01173	0.002719	0.005889
SBUS	0.0004406	0.031412	0.3624899	0.01909741	0.0084876	0	0.145836	0.347153	0	1.996175	0.517903	0.747607	0.00581	0.000141	0	0.016306	0.776212	0.002014788	0.03031	0.010027	0.003218	939.6143	90.8043	0	0.000887	0.000394	0	0.147694	0.014273	0
UBUS	0.0001214	0.0139862	0.0559447	0.01955684	0.00026415	0.0309421	0.292331	0	0.397622	0.196019	0	0.037452	0.002203	0	4.90378E-05	0.012147	0.137548	0.000113315	0.00352	0.000741	0.000867	1565.947	0	3.872534	0.005937	0	0.004998	0.018334	0	0.003599
UBUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	#DIV/0!	0	#DIV/0!	#DIV/0!
UBUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
UBUS	0.0016175	0.0094487	0.0377947	0.09054345	0	0	49.02151	0	0	0.482866	0	0	0.003364	0	0	0.033417	0.078309	0.000121642	0.008354	0.000279	0	1993.862	0	0	6.314386	0	0	0.406462	0	0
MCY	0.0048506	0.1865155	0.3730311	2.56454159	0.66574407	1.3249517	17.71919	0	3.274816	1.130831	0	0.098231	0.002793	0	0.001115643	0.00679	0.198276	0.000971158	0.001561	0.00094	0.00083	224.976	0	21.15473	0.376412	0	0.083594	0.065058	0	0.005575
MH	0.0006759	0.1095708	0.0109615	0.00986429	0.00639056	0.0040591	0.171519	0	0.023106	0.100204	0	0.003557	0.001233	0	3.43562E-06	0.012288	0.239911	1.24225E-05	0.003202	0.006121	0.000148	1367.654	0	0.223896	0.003528	0	0.000297	0.012071	0	0.000424
MH	0.0002884	0.1198709	0.0119871	0.0479214	0	0	0.146552	0	0	2.219768	0	0	0.023754	0	0	0.016	0.250211	0.000272424	0.004	0.006696	9.16E-05	808.3893	0	0	0.002226	0	0	0.127068	0	0

2040 Existing Daily Emissions Data
Mobile Operation Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10	PM2.5
Total	1,515.96	16,473.18	3,339.59	32.21	1,650.57	127.36

Mobile Operation Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10	PM2.5
LDA	437.36	6,059.03	323.35	7.93	727.60	30.19
LDA	0.81	25.91	1.28	0.11	8.86	0.32
LDA	0.98	0.00	0.00	0.00	46.29	1.54
LDT1	85.44	894.04	52.57	1.25	102.41	4.37
LDT1	0.00	0.05	0.02	0.00	0.02	0.00
LDT1	0.08	0.00	0.00	0.00	3.77	0.12
LDT2	241.06	2,903.04	143.49	3.20	281.72	12.08
LDT2	0.83	8.53	1.36	0.18	2.86	0.10
LDT2	0.27	0.00	0.00	0.00	10.21	0.31
MDV	46.03	211.52	40.81	0.34	28.34	1.76
MDV	12.80	63.28	34.68	1.86	40.81	1.78
MDV	8.04	38.03	7.52	0.06	5.55	0.35
LHDT1	5.14	25.69	18.30	1.46	17.73	0.81
LHDT1	183.56	1,822.65	99.21	2.04	173.92	7.79
LHDT2	0.62	19.55	0.98	0.09	6.10	0.23
LHDT2	0.19	0.00	0.00	0.00	7.37	0.22
MHDT	12.33	95.25	12.89	0.08	9.30	0.82
MHDT	3.00	43.32	588.25	2.48	56.70	3.95
HHDT	0.21	16.68	1.65	0.00	0.05	0.00
HHDT	32.13	440.66	1,775.91	10.14	73.86	58.43
HHDT	1.17	193.43	14.94	0.05	1.71	0.12
OBUS	2.97	18.01	2.82	0.01	1.59	0.15
OBUS	0.48	6.53	43.03	0.22	3.36	0.52
SBUS	2.82	22.14	1.40	0.01	5.19	0.23
SBUS	0.24	4.27	28.22	0.05	6.87	0.38
UBUS	0.12	1.65	0.56	0.01	0.36	0.01
UBUS	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	2.88	1,556.97	15.34	0.11	3.55	0.27
MCY	433.86	1,999.56	117.06	0.37	19.62	0.32
MH	0.27	2.58	1.38	0.02	3.35	0.13
MH	0.27	0.83	12.57	0.13	1.51	0.06

2040 Existing Daily Emissions Data
Mobile Operation Emissions (MT per day)

	CO2	CH4	N20	CO2e
Total	2,486.81	0.17	0.14	2,532.63

Mobile Operation Emissions (MT per day)

	CO2	CH4	N20	CO2e
LDA	915.0684	0.0158	0.0242	922.62
LDA	8.9144	0.0000	0.0014	9.33
LDA	0.0000	0.0000	0.0000	0.00
LDT1	148.2297	0.0025	0.0037	149.39
LDT1	0.0290	0.0000	0.0000	0.03
LDT1	0.0000	0.0000	0.0000	0.00
LDT2	407.4177	0.0085	0.0100	410.58
LDT2	3.7855	0.0000	0.0006	3.96
LDT2	0.0000	0.0000	0.0000	0.00
MDV	75.2220	0.0010	0.0019	75.80
MDV	48.5343	0.0003	0.0076	50.79
MDV	15.1205	0.0002	0.0003	15.23
LHDT1	21.0814	0.0001	0.0033	22.06
LHDT1	300.0682	0.0057	0.0065	302.13
LHDT2	10.2709	0.0000	0.0016	10.75
LHDT2	0.0000	0.0000	0.0000	0.00
MHDT	35.4336	0.0005	0.0005	35.61
MHDT	119.9132	0.0001	0.0188	125.48
HHDT	0.3793	0.0000	0.0000	0.39
HHDT	288.7129	0.0007	0.0454	302.12
HHDT	15.9936	0.0241	0.0033	17.56
OBUS	5.8019	0.0001	0.0001	5.83
OBUS	9.0198	0.0000	0.0014	9.44
SBUS	2.4025	0.0002	0.0001	2.43
SBUS	4.0437	0.0000	0.0006	4.23
UBUS	1.6981	0.0000	0.0000	1.71
UBUS	0.0000	0.0000	0.0000	0.00
UBUS	0.0000	0.0000	0.0000	0.00
UBUS	28.7251	0.0910	0.0059	32.73
MCY	10.6335	0.0199	0.0031	12.03
MH	8.2350	0.0000	0.0001	8.26
MH	2.0765	0.0000	0.0003	2.17

2040 Existing Daily Emissions Data
Mobile Operation Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10	PM2.5
Total	1,536.67	16,698.26	3,385.22	32.65	1,673.12	129.11

Mobile Operation Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10	PM2.5
LDA	443.34	6,141.82	327.77	8.04	737.54	30.60
LDA	0.82	26.26	1.30	0.11	8.98	0.32
LDA	0.99	0.00	0.00	0.00	46.92	1.56
LDT1	86.61	906.25	53.29	1.27	103.81	4.42
LDT1	0.01	0.05	0.02	0.00	0.02	0.00
LDT1	0.08	0.00	0.00	0.00	3.82	0.13
LDT2	244.35	2,942.70	145.45	3.24	285.57	12.25
LDT2	0.84	8.65	1.38	0.18	2.90	0.11
LDT2	0.27	0.00	0.00	0.00	10.35	0.32
MDV	46.66	214.41	41.37	0.35	28.73	1.79
MDV	12.98	64.14	35.16	1.88	41.37	1.80
MDV	8.15	38.55	7.63	0.06	5.62	0.36
LHDT1	5.21	26.04	18.55	1.48	17.98	0.82
LHDT1	186.07	1,847.56	100.56	2.07	176.29	7.89
LHDT2	0.63	19.82	0.99	0.09	6.18	0.23
LHDT2	0.19	0.00	0.00	0.00	7.47	0.23
MHDT	12.50	96.56	13.07	0.08	9.43	0.83
MHDT	3.04	43.91	596.28	2.51	57.48	4.01
HHDT	0.21	16.91	1.67	0.00	0.05	0.00
HHDT	32.57	446.68	1,800.18	10.27	74.87	59.23
HHDT	1.18	196.07	15.15	0.05	1.73	0.13
OBUS	3.01	18.25	2.86	0.01	1.61	0.15
OBUS	0.49	6.61	43.61	0.22	3.40	0.53
SBUS	2.86	22.44	1.42	0.01	5.26	0.23
SBUS	0.24	4.32	28.60	0.05	6.97	0.38
UBUS	0.12	1.67	0.56	0.01	0.36	0.01
UBUS	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	2.92	1,578.24	15.55	0.11	3.60	0.28
MCY	439.79	2,026.88	118.66	0.38	19.89	0.32
MH	0.27	2.62	1.40	0.02	3.39	0.13
MH	0.28	0.84	12.74	0.14	1.53	0.06

2040 Existing Daily Emissions Data
Mobile Operation Emissions (MT per day)

	CO2	CH4	N20	CO2e
Total	2,520.79	0.17	0.14	2,567.23

Mobile Operation Emissions (MT per day)

	CO2	CH4	N20	CO2e
LDA	927.5714	0.0160	0.0246	935.22
LDA	9.0362	0.0000	0.0014	9.46
LDA	0.0000	0.0000	0.0000	0.00
LDT1	150.2550	0.0026	0.0038	151.43
LDT1	0.0294	0.0000	0.0000	0.03
LDT1	0.0000	0.0000	0.0000	0.00
LDT2	412.9844	0.0086	0.0101	416.19
LDT2	3.8372	0.0000	0.0006	4.02
LDT2	0.0000	0.0000	0.0000	0.00
MDV	76.2498	0.0010	0.0019	76.83
MDV	49.1975	0.0003	0.0077	51.49
MDV	15.3271	0.0002	0.0003	15.43
LHDT1	21.3695	0.0001	0.0034	22.36
LHDT1	304.1682	0.0058	0.0066	306.26
LHDT2	10.4112	0.0000	0.0016	10.89
LHDT2	0.0000	0.0000	0.0000	0.00
MHDT	35.9178	0.0006	0.0006	36.10
MHDT	121.5517	0.0001	0.0191	127.19
HHDT	0.3845	0.0000	0.0000	0.39
HHDT	292.6577	0.0007	0.0460	306.25
HHDT	16.2122	0.0244	0.0033	17.80
OBUS	5.8812	0.0001	0.0001	5.91
OBUS	9.1431	0.0000	0.0014	9.57
SBUS	2.4353	0.0002	0.0001	2.46
SBUS	4.0989	0.0000	0.0006	4.29
UBUS	1.7213	0.0000	0.0000	1.73
UBUS	0.0000	0.0000	0.0000	0.00
UBUS	0.0000	0.0000	0.0000	0.00
UBUS	29.1176	0.0922	0.0059	33.17
MCY	10.7788	0.0201	0.0031	12.19
MH	8.3475	0.0000	0.0001	8.37
MH	2.1048	0.0000	0.0003	2.20

Alternative	Daily Emissions Data							Annual Emissions Data			
	Mobile Operation Emissions (pounds per day)							Mobile Operation Emissions (MT per yr)[1]			
	ROG	CO	NOx	SOx	PM_{10}	$PM_{2.5}$		CO_2	CH_4	N_20	CO_2e
Existing Base Year	4,123.08	38,621.78	8,474.29	84.66	1,826.78	540.95		1,369,151.11	107.14	77.89	1,394,807.75
2040 with Old Land Use Element	1,515.96	16,473.18	3,339.59	32.21	1,650.57	127.36		862,923.36	59.26	48.87	878,821.38
2040 with Proposed Land Use Element	1,536.67	16,698.26	3,385.22	32.65	1,673.12	129.11		874,713.84	60.07	49.54	890,829.08
Change											
From Existing	-2,586.41	-21,923.52	-5,089.06	-52.01	-153.65	-411.85		-494,437.27	-47.07	-28.35	-503,978.67
From Old Land Use Element	20.71	225.08	45.63	0.44	22.55	1.74		11,790.48	0.81	0.67	12,007.70

Source: Compiled by LSA using on-road vehicle emission factors from EMFAC2017 and VMT data from the Traffic Volume Analysis.

Note: 1) Annual VMT values derived from Daily VMT values multiplied by 347, per ARB methodology (ARB 2008).

ARB = California Air Resources Board

ROG = reactive organic gases

CO = carbon monoxide

NOX = nitrogen oxides

PM_{10} = particulate matter less than 10 microns in diameter

$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

CO_2 = carbon dioxide

CH_4 = methane

N_2O = nitrous oxide

CO_2e = carbon dioxide equivalent

MT/yr = metric tons per year

VMT = vehicle miles traveled

California Air Resources Board (CARB). 2008. Climate Change Scoping Plan. Appendix I: Measure Documentation. December. Website: https://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm (accessed March 2019).

California Air Resources Board (CARB). 2018. Mobile Source Emission Inventory - EMFAC2017 Web Database. This web page was last updated on March 1, 2018. Website: https://www.arb.ca.gov/emfac/ (accessed March 2019).

PlaceType	Residential Density (du/acre)	Non-Residential Intensity (FAR)[1]	Height	Uses Allowed	Land UseSubType	Description	ITE Number
Open Space	N/A	See Open Space and Recreational Element of the General Plan	2 stories	channels and basins, rivers, utility rights-of-way, oil islands, inland bodies of water, nature preserves, marine habitats, estuaries, wetlands, lagoons; Limited commercial recreation uses that supplement recreation services and	City Park	City parks are owned and operated by a city.	411
					Golf Course	Golf courses include 9, 18, 27 and 36 hole courses. Some sites may also have driving ranges and clubhouses with a pro shop, restaurant, lounge and banquet facilities.	430
Founding and Contemporary Neighborhood	7–18	0.25 to 0.50	2 stories	Single-family and low-density housing; Neighborhood-serving low-intensity commercial uses	Single Family Housing	All single-family detached homes on individual lots typical of a suburban subdivision	210
					Library	A library is a facility that consists of shelved books; reading rooms or areas; and sometimes meeting rooms.	590
Multiple-Family Residential: Low	Up to 29 du/ac based on lot size	0.25 to 0.50	4 stories	Duplex, triplex and garden apartment housing; Neighborhood-serving, low-intensity commercial uses	Apartments Low Rise	Low-rise apartments are units located in rental buildings that have 1-2 levels.	221
Moderate	Up to 62 du/ac based on lot size	0.50 to 0.75	6 stories	Moderate-density apartment and condominium buildings on larger parcels of land; Neighborhood-serving, low-intensity commercial uses	Apartments Mid Rise	Mid-rise apartments in rental buildings that have between 3 and 10 levels.	223
					Condo/Townhouse H	These are ownership units that have three or more levels.	232
Neighborhood-Serving Centers and Corridors: Low	Up to 44 du/ac based on lot size	0.50 to 1.00	4 stories	Neighborhood-serving, low-intensity commercial uses; Low-density apartment and condominium buildings	Apartments Low Rise	Low-rise apartments are units located in rental buildings that have 1-2 levels.	221
					Condo/Townhouse	These are ownership units that have at least one other owned unit within the same building structure.	230
Moderate	Up to 54 du/ac based on lot size	1.00 to 1.50	7 stories	Neighborhood-serving, moderate-intensity commercial uses; Moderate-density apartment and condominium buildings on larger parcels of land	Apartments Mid Rise	Mid-rise apartments in rental buildings that have between 3 and 10 levels.	223
					Condo/Townhouse H	These are ownership units that have three or more levels.	232
					Pharmacy/Drugstore	These are retail facilities that primarily sell prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationery, personal care products, limited food products and general merchandise. The drug stores in this category do not contain drive-through windows.	880
Transit-Oriented Development Low	N/A	1.50 to 3.00	5 stories (consistent with Midtown Specific Plan)	Low urban density apartment and condominium buildings; Low-intensity commercial uses	Apartments Low Rise	Low-rise apartments are units located in rental buildings that have 1-2 levels.	221
					Condo/Townhouse H	These are ownership units that have three or more levels.	232
Moderate	N/A	2.00 to 4.00	10 stories	Moderate urban density apartment and condominium buildings; Moderate-intensity commercial uses	Apartments Mid Rise	Mid-rise apartments in rental buildings that have between 3 and 10 levels.	223
					Condo/Townhouse H	These are ownership units that have three or more levels.	232
Community Commercial	N/A	2.00 to 4.00	7 stories	Commercial uses that serve community-based needs for goods and services	Convenience Market	These markets sell convenience foods, newspapers, magazines and often beer and wine. They do not have gasoline pumps.	851
					Strip Mall	Small strip shopping centers contain a variety of retail shops and specialize in quality apparel, hard goods and services such as real estate offices, dance studios, florists and small restaurants.	814
					Pharmacy/Drugstore	These are retail facilities that primarily sell prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationery, personal care products, limited food products and general merchandise. The drug stores in this category do not contain drive-through windows.	880
Industrial	N/A	N/A	65 ft	Research and development activities, storage, industrial and manufacturing endeavors, tank farms, oil drilling and the like; Limited commercial uses accessory to the industrial business	Research & Develop	R&D centers are facilities devoted almost exclusively to R&D activities. The range of specific types of businesses contained in this land use category varies significantly. R&D centers may contain offices and light fabrication areas.	760
Neo-Industrial	Up to 36 du/ac based on lot size	0.50 to 1.00	65 ft	Light industrial, clean manufacturing and offices; Commercial uses accessory to creative business endeavor(s); Repurposed buildings with live/work artist studios	Manufacturing	Manufacturing facilities are areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, R&D functions at the site.	140
					General Light Industry	Light industrial facilities are free-standing facilities devoted to a single use. The facilities have an emphasis on activities other than manufacturing and typically have minimal office space. Typical light industrial activities include printing, material testing and assembly of data processing equipment.	110
Regional-Serving Facility	N/A	N/A	See Figure 3.4, PlaceType Heights	Medical centers, higher education campuses, Port of Long Beach, Long Beach Airport and surrounding areas, public utility facilities (e.g., water, energy), destination retail centers and similar uses	Medical Office Building	This is a facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical and surgical care. One or more private physicians or dentists generally operate this type of facility.	720
					Regional Shopping Center	A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center's composition is related to its market area in terms of size, location and type of store.	820
					Junior College (2Yr)	This land use includes two-year junior, community, or technical colleges.	540
Downtown (See Downtown Plan)	Regulated through FAR and height	Regulated through FAR and height	See Downtown Plan,	See Downtown Plan	General Office Building	A general office building houses multiple tenants where affairs of businesses commercial or industrial organizations or professional persons or firms are conducted. If information is known about individual buildings, it is suggested that this land use be used instead of the more generic office park.	710
Waterfront	Varies by area; see descriptions.	Varies by area; see descriptions.	See Figure 3.4, PlaceType Heights	Varies by area; see descriptions			

Estimated number of units and square footages equals 1 acre

	Placetypes - Land Uses	Units (dwelling units)	Square footage (1,000 sf)	Land Use Category
1	Single Family Housing	3	-	Single Family
2	Apartments Low Rise	16	-	Multi-Family
3	Apartments Mid Rise	38	-	Multi-Family
4	Condo/Townhouse High Rise	16	-	Multi-Family
5	City Park	-	43.56	Public Facilities/ Institutional
6	Golf Course	-	43.56	Public Facilities/ Institutional
7	Library	-	43.56	Public Facilities/ Institutional
8	Junior College (2Yr)	-	43.56	Public Facilities/ Institutional
9	General Office Building	-	43.56	Office
10	Medical Office Building	-	43.56	Office
11	Convenience Market (24 Hour)	-	43.56	Commercial
12	Pharmacy/Drugstore W/O Drive Thru	-	43.56	Commercial
13	Regional Shopping Center	-	43.56	Commercial
14	Strip Mall	-	43.56	Commercial
15	General Light Industry	-	43.56	Industrial
16	Manufacturing	-	43.56	Industrial
17	Research & Development	-	43.56	Industrial

Existing 2018 Emission Factors

	Category	Pollutant Emission Factors, lbs/acre/day					
		ROG	NOX	CO	SOX	PM10	PM2.5
1 Single Family Residential	Area Sources	0.2098	0.0572	1.0026	0.0010	0.1247	0.1247
	Energy Sources	0.0024	0.0208	0.0089	0.0001	0.0017	0.0017
	Total SFR Emission Factors	0.2122	0.0780	1.0115	0.0011	0.1264	0.1264
2 Apartments Low Rise	Area Sources	0.8434	0.3050	5.3470	0.0143	0.6652	0.6652
	Energy Sources	0.0077	0.0660	0.0281	0.0004	0.0053	0.0053
	Total Apt Low Emission Factors	0.8511	0.3710	5.3751	0.0147	0.6705	0.6705
3 Apartments Mid Rise	Area Sources	0.9776	0.5725	3.3852	0.0010	0.0606	0.0606
	Energy Sources	0.0150	0.1285	0.0547	0.0010	0.0104	0.0104
	Total Apt Mid Emission Factors	0.9926	0.7010	3.4399	0.0020	0.0710	0.0710
4 Condos/Townhouse	Area Sources	0.8434	0.3050	5.3470	0.0143	0.6652	0.6652
	Energy Sources	0.0010	0.0694	0.0295	0.0010	0.0010	0.0010
	Total Condo Emission Factors	0.8444	0.3744	5.3765	0.0153	0.6662	0.6662
5 City Park	Area Sources	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
	Energy Sources	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Total City Park Emission Factors	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
6 Golf Course	Area Sources	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
	Energy Sources	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Total Golf Course Emission Factors	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
7 Library	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total Library Emission Factors	0.9969	0.2128	0.1789	0.0010	0.0171	0.0171
8 Junior College	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0349	0.3168	0.2662	0.0010	0.0241	0.0241
	Total Jr College Emission Factors	1.0085	0.3178	0.2672	0.0010	0.0251	0.0251
9 General Office Building	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0134	0.1218	0.1023	0.0010	0.0010	0.0010
	Total Gen Office Emission Factors	0.9870	0.1228	0.1033	0.0010	0.0020	0.0020
10 Medical Office Building	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0134	0.1218	0.1023	0.0010	0.0010	0.0010
	Total Med Office Emission Factors	0.9870	0.1228	0.1033	0.0010	0.0020	0.0020
11 Convenience Market	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Market Emission Factors	0.9746	0.0202	0.0171	0.0010	0.0020	0.0020
12 Pharmacy/Drug Store	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Pharmacy Emission Factors	0.9746	0.0202	0.0171	0.0010	0.0020	0.0020
13 Regional Shopping Center	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Shop Ctr Emission Factors	0.9746	0.0202	0.0171	0.0010	0.0020	0.0020
14 Strip Mall	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Mall Emission Factors	0.9746	0.0202	0.0171	0.0010	0.0020	0.0020
15 General Light Industrial	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total Lt Industrial Emission Factors	0.9969	0.2128	0.1789	0.0010	0.0171	0.0171
16 Manufacturing	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total Manufacturing Emission Factors	0.9969	0.2128	0.1789	0.0010	0.0171	0.0171
17 Research & Development	Area Sources	0.9736	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total R&D Emission Factors	0.9969	0.2128	0.1789	0.0010	0.0171	0.0171

Existing 2018 GHG Emission Factors

	Category	GHG Emission Factors, MT/acre/year					
		Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
1 Single Family Residential	Operational emissions						
	Area Sources	0.20	0.66	0.86	0.00	0.00	0.89
	Energy Sources	0.00	12.24	12.24	0.00	0.00	12.30
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	0.75	0.00	0.75	0.04	0.00	1.86
	Water Sources	0.06	1.25	1.31	0.00	0.00	1.52
	Total SFR Emission Factors	1.01	14.15	15.17	0.04	0.00	16.56
2 Apartments Low Rise	Operational emissions						
	Area Sources	1.07	3.54	4.61	0.00	0.00	4.76
	Energy Sources	0.00	35.57	35.57	0.00	0.00	35.73
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	1.49	0.00	1.49	0.09	0.00	3.70
	Water Sources	0.33	6.65	6.98	0.03	0.00	8.09
	Total Apt Low Rise Emission Factors	2.90	45.76	48.65	0.12	0.00	52.28
3 Apartments Mid Rise	Operational emissions						
	Area Sources	0.00	8.40	8.40	0.00	0.00	8.46
	Energy Sources	0.00	76.18	76.18	0.00	0.00	76.52
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	3.55	0.00	3.55	0.21	0.00	8.79
	Water Sources	0.79	15.80	16.58	0.08	0.00	19.22
	Total Apt Mid Rise Emission Factors	4.33	100.37	104.71	0.29	0.00	112.99
4 Condos/Townhouse	Operational emissions						
	Area Sources	1.07	3.54	4.61	0.00	0.00	4.76
	Energy Sources	0.00	40.36	40.36	0.00	0.00	40.54
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	1.49	0.00	1.49	0.09	0.00	3.70
	Water Sources	0.33	6.65	6.98	0.03	0.00	8.09
	Total Condo Emission Factors	2.90	50.55	53.44	0.12	0.00	57.09
5 City Park	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	0.02	0.00	0.02	0.00	0.00	0.05
	Water Sources	0.00	4.22	4.22	0.00	0.00	4.23
	Total City Park Emission Factors	0.02	4.22	4.24	0.00	0.00	4.28
6 Golf Course	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	0.19	0.00	0.19	0.01	0.00	0.47
	Water Sources	0.00	4.22	4.22	0.00	0.00	4.23
	Total Golf Course Emission Factors	0.19	4.22	4.41	0.01	0.00	4.70
7 Library							
	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	196.13	196.13	0.00	0.00	196.93
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	8.14	0.00	8.14	0.48	0.00	20.18
	Water Sources	0.43	13.20	13.63	0.05	0.00	15.10
	Total Library Emission Factors	8.58	209.33	217.91	0.53	0.00	232.21
8 Junior College	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	202.02	202.02	0.00	0.00	202.89
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	11.50	0.00	11.50	0.68	0.00	28.48
	Water Sources	0.68	20.69	21.37	0.07	0.00	23.68
	Total Jr College Emission Factors	12.17	222.71	234.88	0.75	0.00	255.04
9 General Office Building	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	204.49	204.49	0.00	0.00	205.28
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	8.22	0.00	8.22	0.49	0.00	20.37
	Water Sources	2.46	48.92	51.37	0.25	0.00	59.63
	Total General Office Emission Factors	10.68	253.41	264.09	0.74	0.00	285.28

10	Medical Office Building	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	204.49	204.49	0.00	0.00	205.28
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	95.50	0.00	95.50	5.64	0.00	236.59
		Water Sources	1.73	26.36	28.10	0.18	0.00	33.90
		Total Medical Office Emission Factors	97.23	230.85	328.08	5.82	0.00	475.76
11	Convenience Market	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	191.18	191.18	0.00	0.00	191.87
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	26.57	0.00	26.57	1.57	0.00	65.83
		Water Sources	1.02	20.39	21.41	0.11	0.00	24.85
		Total Market Emission Factors	27.60	211.57	239.16	1.68	0.00	282.56
12	Pharmacy/Drug Store	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	191.18	191.18	0.00	0.00	191.87
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	26.59	0.00	26.59	1.57	0.00	65.87
		Water Sources	0.97	19.39	20.36	0.10	0.00	23.64
		Total Pharmacy Emission Factors	27.56	210.57	238.13	1.67	0.00	281.38
13	Regional Shopping Center	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	191.18	191.18	0.00	0.00	191.87
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	9.28	0.00	9.28	0.55	0.00	23.00
		Water Sources	1.02	20.39	21.41	0.11	0.00	24.85
		Total Shopping Center Emission Factors	10.31	211.57	221.88	0.65	0.00	239.73
14	Strip Mall	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	191.18	191.18	0.00	0.00	191.87
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	9.28	0.00	9.28	0.55	0.00	23.00
		Water Sources	1.02	20.39	21.41	0.11	0.00	24.85
		Total Stirp Mall Emission Factors	10.31	211.57	221.88	0.65	0.00	239.73
15	General Light Industrial	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	196.13	196.13	0.00	0.00	196.93
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	10.96	0.00	10.96	0.65	0.00	27.16
		Water Sources	3.20	41.79	44.99	0.33	0.00	55.65
		Total General Light Industrial Emission Factors	14.16	237.92	252.08	0.98	0.00	279.75
16	Manufacturing	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	196.13	196.13	0.00	0.00	196.93
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	10.96	0.00	10.96	0.65	0.00	27.16
		Water Sources	3.20	41.79	44.99	0.33	0.00	55.65
		Total Manufacturing Emission Factors	14.16	237.92	252.08	0.98	0.00	279.75
17	Research & Development	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	196.13	196.13	0.00	0.00	196.93
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	0.67	0.00	0.67	0.04	0.00	1.66
		Water Sources	6.80	88.86	95.65	0.70	0.02	118.33
		Total Research & Development Emission Factors	7.47	284.99	292.46	0.74	0.02	316.93

Projected 2040 Emission Factors

	Category	Pollutant Emission Factors, lbs/acre/day					
		ROG	NOX	CO	SOX	PM10	PM2.5
1 Single Family Residential	Area Sources	0.1285	0.0451	0.2644	0.0003	0.0048	0.0048
	Energy Sources	0.0024	0.0208	0.0089	0.0001	0.0017	0.0017
	Total SFR Emission Factors	0.1309	0.0659	0.2733	0.0004	0.0065	0.0065
2 Apartments Low Rise	Area Sources	0.4099	0.2408	1.4102	0.0015	0.0256	0.0256
	Energy Sources	0.0010	0.0660	0.0281	0.0010	0.0010	0.0010
	Total Apt Low Emission Factors	0.4109	0.3068	1.4383	0.0025	0.0266	0.0266
3 Apartments Mid Rise	Area Sources	0.4740	0.4519	0.8858	0.0004	0.0023	0.0023
	Energy Sources	0.0150	0.1285	0.0547	0.0010	0.0104	0.0104
	Total Apt Mid Emission Factors	0.4890	0.5804	0.9405	0.0014	0.0127	0.0127
4 Condos/Townhouse	Area Sources	0.4099	0.2408	1.4102	0.0015	0.0256	0.0256
	Energy Sources	0.0010	0.0694	0.0295	0.0010	0.0010	0.0010
	Total Condo Emission Factors	0.4109	0.3102	1.4397	0.0025	0.0266	0.0266
5 City Park	Area Sources	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
	Energy Sources	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Total City Park Emission Factors	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
6 Golf Course	Area Sources	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
	Energy Sources	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Total Golf Course Emission Factors	0.2251	0.0000	0.0010	0.0000	0.0000	0.0000
7 Library	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total Library Emission Factors	0.9968	0.2128	0.1789	0.0010	0.0171	0.0171
8 Junior College	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0349	0.3168	0.2662	0.0010	0.0241	0.0241
	Total Jr College Emission Factors	1.0084	0.3178	0.2672	0.0010	0.0251	0.0251
9 General Office Building	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0134	0.1218	0.1023	0.0010	0.0010	0.0010
	Total Gen Office Emission Factors	0.9869	0.1228	0.1033	0.0010	0.0020	0.0020
10 Medical Office Building	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0134	0.1218	0.1023	0.0010	0.0010	0.0010
	Total Med Office Emission Factors	0.9869	0.1228	0.1033	0.0010	0.0020	0.0020
11 Convenience Market	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Market Emission Factors	0.9745	0.0202	0.0171	0.0010	0.0020	0.0020
12 Pharmacy/Drug Store	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Pharmacy Emission Factors	0.9745	0.0202	0.0171	0.0010	0.0020	0.0020
13 Regional Shopping Center	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Shop Ctr Emission Factors	0.9745	0.0202	0.0171	0.0010	0.0020	0.0020
14 Strip Mall	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0010	0.0192	0.0161	0.0010	0.0010	0.0010
	Total Mall Emission Factors	0.9745	0.0202	0.0171	0.0010	0.0020	0.0020
15 General Light Industrial	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total Lt Industrial Emission Factors	0.9968	0.2128	0.1789	0.0010	0.0171	0.0171
16 Manufacturing	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total Manufacturing Emission Factors	0.9968	0.2128	0.1789	0.0010	0.0171	0.0171
17 Research & Development	Area Sources	0.9735	0.0010	0.0010	0.0000	0.0010	0.0010
	Energy Sources	0.0233	0.2118	0.1779	0.0010	0.0161	0.0161
	Total R&D Emission Factors	0.9968	0.2128	0.1789	0.0010	0.0171	0.0171

Projected 2040 GHG Emission Factors

	Category	GHG Emission Factors, MT/acre/year					
		Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
1 Single Family Residential	Operational emissions						
	Area Sources	0.00	0.66	0.66	0.00	0.00	0.67
	Energy Sources	0.00	8.32	8.32	0.00	0.00	8.36
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	0.75	0.00	0.75	0.04	0.00	1.86
	Water Sources	0.06	0.62	0.69	0.01	0.00	0.89
	Total SFR Emission Factors	0.81	9.61	10.42	0.05	0.00	11.78
2 Apartments Low Rise	Operational emissions						
	Area Sources	0.00	3.54	3.54	0.00	0.00	3.56
	Energy Sources	0.00	24.76	24.76	0.00	0.00	24.88
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	1.49	0.00	1.49	0.09	0.00	3.70
	Water Sources	0.33	3.33	3.66	0.03	0.00	4.76
	Total Apt Low Rise Emission Factors	1.82	31.62	33.45	0.12	0.00	36.90
3 Apartments Mid Rise	Operational emissions						
	Area Sources	0.00	8.40	8.40	0.00	0.00	8.46
	Energy Sources	0.00	51.67	51.67	0.00	0.00	51.92
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	3.55	0.00	3.55	0.21	0.00	8.79
	Water Sources	0.79	7.90	8.68	0.08	0.00	11.30
	Total Apt Mid Rise Emission Factors	4.33	67.97	72.30	0.29	0.00	80.47
4 Condos/Townhouse	Operational emissions						
	Area Sources	0.00	3.54	3.54	0.00	0.00	3.56
	Energy Sources	0.00	27.51	27.51	0.00	0.00	27.65
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	1.49	0.00	1.49	0.09	0.00	3.70
	Water Sources	0.33	3.33	3.66	0.03	0.00	4.76
	Total Condo Emission Factors	1.82	34.37	36.20	0.12	0.00	39.67
5 City Park	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	0.02	0.00	0.02	0.00	0.00	0.05
	Water Sources	0.00	2.11	2.11	0.00	0.00	2.12
	Total City Park Emission Factors	0.02	2.14	2.16	0.00	0.00	2.19
6 Golf Course	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	0.19	0.00	0.19	0.01	0.00	0.47
	Water Sources	0.00	2.11	2.11	0.00	0.00	2.12
	Total Golf Course Emission Factors	0.19	2.14	2.33	0.01	0.00	2.61
7 Library							
	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	119.10	119.10	0.00	0.00	119.63
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	8.14	0.00	8.14	0.48	0.00	20.18
	Water Sources	0.43	6.60	7.03	0.04	0.00	8.48
	Total Library Emission Factors	8.58	125.70	134.28	0.53	0.00	148.29
8 Junior College	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	132.48	132.48	0.00	0.00	133.11
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	11.50	0.00	11.50	0.68	0.00	28.48
	Water Sources	0.68	10.35	11.02	0.07	0.00	13.29
	Total Jr College Emission Factors	12.17	142.83	155.00	0.75	0.00	174.88
9 General Office Building	Operational emissions						
	Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Energy Sources	0.00	114.34	114.34	0.00	0.00	114.81
	Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
	Waste Sources	8.22	0.00	8.22	0.49	0.00	20.37
	Water Sources	2.46	24.46	26.91	0.25	0.00	35.09
	Total General Office Emission Factors	10.68	138.80	149.48	0.74	0.00	170.27

10	Medical Office Building	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	114.34	114.34	0.00	0.00	114.81
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	95.50	0.00	95.50	5.64	0.00	236.59
		Water Sources	1.73	13.18	14.92	0.18	0.00	20.67
		Total Medical Office Emission Factors	97.23	127.52	224.76	5.82	0.00	372.07
11	Convenience Market	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	97.50	97.50	0.00	0.00	97.86
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	26.57	0.00	26.57	1.57	0.00	65.83
		Water Sources	1.02	10.19	11.22	0.11	0.00	14.62
		Total Market Emission Factors	27.60	107.69	135.29	1.68	0.00	178.31
12	Pharmacy/Drug Store	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	97.50	97.50	0.00	0.00	97.86
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	26.59	0.00	26.59	1.57	0.00	65.87
		Water Sources	0.97	9.69	10.67	0.10	0.00	13.91
		Total Pharmacy Emission Factors	27.56	107.19	134.75	1.67	0.00	177.63
13	Regional Shopping Center	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	97.50	97.50	0.00	0.00	97.86
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	9.28	0.00	9.28	0.55	0.00	23.00
		Water Sources	1.02	10.19	11.22	0.11	0.00	14.62
		Total Shopping Center Emission Factors	10.31	107.69	118.00	0.65	0.00	135.48
14	Strip Mall	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	97.50	97.50	0.00	0.00	97.86
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	9.28	0.00	9.28	0.55	0.00	23.00
		Water Sources	1.02	10.19	11.22	0.11	0.00	14.62
		Total Stirp Mall Emission Factors	10.31	107.69	118.00	0.65	0.00	135.48
15	General Light Industrial	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	119.10	119.10	0.00	0.00	119.63
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	10.96	0.00	10.96	0.65	0.00	27.16
		Water Sources	3.20	20.90	24.09	0.33	0.00	34.68
		Total General Light Industrial Emission Factors	14.16	140.00	154.16	0.98	0.00	181.48
16	Manufacturing	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	119.10	119.10	0.00	0.00	119.63
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	10.96	0.00	10.96	0.65	0.00	27.16
		Water Sources	3.20	20.90	24.09	0.33	0.00	34.68
		Total Manufacturing Emission Factors	14.16	140.00	154.16	0.98	0.00	181.48
17	Research & Development	Operational emissions					
		Area Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Energy Sources	0.00	119.10	119.10	0.00	0.00	119.63
		Mobile Sources	0.00	0.00	0.00	0.00	0.00	0.00
		Waste Sources	0.67	0.00	0.67	0.04	0.00	1.66
		Water Sources	6.80	44.43	51.22	0.70	0.02	73.74
		Total Research & Development Emission Factors	7.47	163.53	171.00	0.74	0.02	195.04

2018 Area Source Category	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	4,232.65	1,153.99	20,227.12	20.17	2,515.78	2,515.78
Multi-Family – Low	42.73	11.65	204.20	0.20	25.40	25.40
Multi-Family – Moderate	28.74	7.84	137.36	0.14	17.08	17.08
Neighborhood Serving Centers and Corridors – Low	53.15	14.49	253.99	0.25	31.59	31.59
Neighborhood Serving Centers and Corridors – Moderate	33.99	9.27	162.42	0.16	20.20	20.20
Community Commercial	5.94	1.62	28.41	0.03	3.53	3.53
Transit-Oriented Development - Low	19.02	5.19	90.90	0.09	11.31	11.31
Transit-Oriented Development - Moderate	13.64	3.72	65.17	0.07	8.11	8.11
Neo-Industrial	6.15	1.68	29.41	0.03	3.66	3.66
Industrial	10.14	2.76	48.46	0.05	6.03	6.03
Downtown	24.13	6.58	115.30	0.12	14.34	14.34
Waterfront	0.42	0.11	2.01	0.00	0.25	0.25
Regional Serving Facility	0.42	0.11	2.01	0.00	0.25	0.25
2018 Total	4,471.12	1,219.01	21,366.74	21.31	2,657.52	2,657.52

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	764.24	276.37	4,845.16	12.96	602.77	602.77
Multi-Family – Low	117.99	42.67	748.02	2.00	93.06	93.06
Multi-Family – Moderate	205.81	74.43	1,304.78	3.49	162.32	162.32
Neighborhood Serving Centers and Corridors – Low	78.30	28.31	496.38	1.33	61.75	61.75
Neighborhood Serving Centers and Corridors – Moderate	159.05	57.52	1,008.36	2.70	125.45	125.45
Community Commercial	49.85	18.03	316.03	0.85	39.32	39.32
Transit-Oriented Development - Low	43.38	15.69	275.04	0.74	34.22	34.22
Transit-Oriented Development - Moderate	30.92	11.18	196.06	0.52	24.39	24.39
Neo-Industrial	22.77	8.24	144.37	0.39	17.96	17.96
Industrial	14.29	5.17	90.56	0.24	11.27	11.27
Downtown	200.71	72.58	1,272.47	3.40	158.30	158.30
Waterfront	49.85	18.03	316.03	0.85	39.32	39.32
Regional Serving Facility	17.47	6.32	110.73	0.30	13.78	13.78
2018 Total	1,754.62	634.53	11,123.99	29.75	1,383.89	1,383.89

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Apartments Mid Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	372.99	218.43	1,291.57	0.38	23.12	23.12
Multi-Family – Low	57.58	33.72	199.40	0.06	3.57	3.57
Multi-Family – Moderate	100.44	58.82	347.81	0.10	6.23	6.23
Neighborhood Serving Centers and Corridors – Low	38.21	22.38	132.32	0.04	2.37	2.37
Neighborhood Serving Centers and Corridors – Moderate	77.62	45.46	268.80	0.08	4.81	4.81
Community Commercial	24.33	14.25	84.24	0.02	1.51	1.51
Transit-Oriented Development - Low	21.17	12.40	73.32	0.02	1.31	1.31
Transit-Oriented Development - Moderate	15.09	8.84	52.26	0.02	0.94	0.94
Neo-Industrial	11.11	6.51	38.48	0.01	0.69	0.69
Industrial	6.97	4.08	24.14	0.01	0.43	0.43
Downtown	97.96	57.37	339.20	0.10	6.07	6.07
Waterfront	24.33	14.25	84.24	0.02	1.51	1.51
Regional Serving Facility	8.52	4.99	29.52	0.01	0.53	0.53
2018 Total	856.34	501.49	2,965.32	0.88	53.08	53.08

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Condos/Townhouse						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	764.24	276.37	4,845.16	12.96	602.77	602.77
Multi-Family – Low	117.99	42.67	748.02	2.00	93.06	93.06
Multi-Family – Moderate	205.81	74.43	1,304.78	3.49	162.32	162.32
Neighborhood Serving Centers and Corridors – Low	78.30	28.31	496.38	1.33	61.75	61.75
Neighborhood Serving Centers and Corridors – Moderate	159.05	57.52	1,008.36	2.70	125.45	125.45
Community Commercial	49.85	18.03	316.03	0.85	39.32	39.32
Transit-Oriented Development - Low	43.38	15.69	275.04	0.74	34.22	34.22
Transit-Oriented Development - Moderate	30.92	11.18	196.06	0.52	24.39	24.39
Neo-Industrial	22.77	8.24	144.37	0.39	17.96	17.96
Industrial	14.29	5.17	90.56	0.24	11.27	11.27
Downtown	200.71	72.58	1,272.47	3.40	158.30	158.30
Waterfront	49.85	18.03	316.03	0.85	39.32	39.32
Regional Serving Facility	17.47	6.32	110.73	0.30	13.78	13.78
2018 Total	1,754.62	634.53	11,123.99	29.75	1,383.89	1,383.89

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
City Park						
Open Space	4.05	0.00	0.04	0.00	0.00	0.00
Founding and Contemporary Neighborhood	11.34	0.00	0.10	0.00	0.00	0.00
Multi-Family – Low	0.08	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.19	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.11	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.18	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.26	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.21	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.02	0.00	0.00	0.00	0.00	0.00
Industrial	0.25	0.00	0.00	0.00	0.00	0.00
Downtown	0.78	0.00	0.01	0.00	0.00	0.00
Waterfront	0.65	0.00	0.01	0.00	0.00	0.00
Regional Serving Facility	9.60	0.00	0.09	0.00	0.00	0.00
2018 Total	27.74	0.00	0.25	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Golf Course						
Open Space	4.05	0.00	0.02	0.00	0.00	0.00
Founding and Contemporary Neighborhood	11.34	0.00	0.05	0.00	0.00	0.00
Multi-Family – Low	0.08	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.19	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.11	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.18	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.26	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.21	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.02	0.00	0.00	0.00	0.00	0.00
Industrial	0.25	0.00	0.00	0.00	0.00	0.00
Downtown	0.78	0.00	0.00	0.00	0.00	0.00
Waterfront	0.65	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	9.60	0.00	0.04	0.00	0.00	0.00
2018 Total	27.74	0.00	0.12	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Library						
Open Space	17.53	0.02	0.02	0.00	0.02	0.02
Founding and Contemporary Neighborhood	49.06	0.05	0.05	0.00	0.05	0.05
Multi-Family – Low	0.35	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.82	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.49	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.80	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	1.12	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.91	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.11	0.00	0.00	0.00	0.00	0.00
Industrial	1.10	0.00	0.00	0.00	0.00	0.00
Downtown	3.36	0.00	0.00	0.00	0.00	0.00
Waterfront	2.80	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	41.54	0.04	0.04	0.00	0.04	0.04
2018 Total	119.99	0.12	0.12	0.00	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Junior College						
Open Space	17.53	0.02	0.02	0.00	0.02	0.02
Founding and Contemporary Neighborhood	49.06	0.05	0.05	0.00	0.05	0.05
Multi-Family – Low	0.35	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.82	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.49	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.80	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	1.12	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.91	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.11	0.00	0.00	0.00	0.00	0.00
Industrial	1.10	0.00	0.00	0.00	0.00	0.00
Downtown	3.36	0.00	0.00	0.00	0.00	0.00
Waterfront	2.80	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	41.54	0.04	0.04	0.00	0.04	0.04
2018 Total	119.99	0.12	0.12	0.00	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
General Office Building						
Open Space	0.42	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	7.93	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.02	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	1.85	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	2.94	0.00	0.00	0.00	0.00	0.00
Community Commercial	3.81	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	2.23	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.58	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.16	0.00	0.00	0.00	0.00	0.00
Industrial	4.12	0.00	0.00	0.00	0.00	0.00
Downtown	43.58	0.04	0.04	0.00	0.04	0.04
Waterfront	8.63	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	12.96	0.01	0.01	0.00	0.01	0.01
2018 Total						

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Medical Office Building						
Open Space	0.42	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	7.93	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.02	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	1.85	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	2.94	0.00	0.00	0.00	0.00	0.00
Community Commercial	3.81	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	2.23	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.58	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.16	0.00	0.00	0.00	0.00	0.00
Industrial	4.12	0.00	0.00	0.00	0.00	0.00
Downtown	43.58	0.04	0.04	0.00	0.04	0.04
Waterfront	8.63	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	12.96	0.01	0.01	0.00	0.01	0.01
2018 Total	89.23	0.09	0.09	0.00	0.09	0.09

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Convenience Market						
Open Space	3.79	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	26.84	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.24	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	10.56	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	11.85	0.01	0.01	0.00	0.01	0.01
Community Commercial	23.88	0.02	0.02	0.00	0.02	0.02
Transit-Oriented Development - Low	5.58	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	4.40	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.15	0.00	0.00	0.00	0.00	0.00
Industrial	1.79	0.00	0.00	0.00	0.00	0.00
Downtown	10.92	0.01	0.01	0.00	0.01	0.01
Waterfront	11.66	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	3.77	0.00	0.00	0.00	0.00	0.00
2018 Total	117.43	0.12	0.12	0.00	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Pharmacy/Drug Store						
Open Space	3.79	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	26.84	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.24	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	10.56	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	11.85	0.01	0.01	0.00	0.01	0.01
Community Commercial	23.88	0.02	0.02	0.00	0.02	0.02
Transit-Oriented Development - Low	5.58	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	4.40	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.15	0.00	0.00	0.00	0.00	0.00
Industrial	1.79	0.00	0.00	0.00	0.00	0.00
Downtown	10.92	0.01	0.01	0.00	0.01	0.01
Waterfront	11.66	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	3.77	0.00	0.00	0.00	0.00	0.00
2018 Total	117.43	0.12	0.12	0.00	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Regional Shopping Center						
Open Space	3.79	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	26.84	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.24	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	10.56	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	11.85	0.01	0.01	0.00	0.01	0.01
Community Commercial	23.88	0.02	0.02	0.00	0.02	0.02
Transit-Oriented Development - Low	5.58	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	4.40	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.15	0.00	0.00	0.00	0.00	0.00
Industrial	1.79	0.00	0.00	0.00	0.00	0.00
Downtown	10.92	0.01	0.01	0.00	0.01	0.01
Waterfront	11.66	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	3.77	0.00	0.00	0.00	0.00	0.00
2018 Total	117.43	0.12	0.12	0.00	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Strip Mall						
Open Space	3.79	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	26.84	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.24	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	10.56	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	11.85	0.01	0.01	0.00	0.01	0.01
Community Commercial	23.88	0.02	0.02	0.00	0.02	0.02
Transit-Oriented Development - Low	5.58	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	4.40	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.15	0.00	0.00	0.00	0.00	0.00
Industrial	1.79	0.00	0.00	0.00	0.00	0.00
Downtown	10.92	0.01	0.01	0.00	0.01	0.01
Waterfront	11.66	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	3.77	0.00	0.00	0.00	0.00	0.00
2018 Total	117.43	0.12	0.12	0.00	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
General Light Industrial						
Open Space	8.20	0.01	0.01	0.00	0.01	0.01
Founding and Contemporary Neighborhood	4.87	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.74	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	1.26	0.00	0.00	0.00	0.00	0.00
Community Commercial	7.91	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Low	0.06	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.04	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	9.77	0.01	0.01	0.00	0.01	0.01
Industrial	30.30	0.03	0.03	0.00	0.03	0.03
Downtown	0.37	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	67.37	0.07	0.07	0.00	0.07	0.07
2018 Total	130.91	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Manufacturing						
Open Space	8.20	0.01	0.01	0.00	0.01	0.01
Founding and Contemporary Neighborhood	4.87	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.74	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	1.26	0.00	0.00	0.00	0.00	0.00
Community Commercial	7.91	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Low	0.06	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.04	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	9.77	0.01	0.01	0.00	0.01	0.01
Industrial	30.30	0.03	0.03	0.00	0.03	0.03
Downtown	0.37	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	67.37	0.07	0.07	0.00	0.07	0.07
2018 Total	130.91	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Research & Development						
Open Space	8.20	0.01	0.01	0.00	0.01	0.01
Founding and Contemporary Neighborhood	4.87	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.74	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	1.26	0.00	0.00	0.00	0.00	0.00
Community Commercial	7.91	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Low	0.06	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.04	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	9.77	0.01	0.01	0.00	0.01	0.01
Industrial	30.30	0.03	0.03	0.00	0.03	0.03
Downtown	0.37	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	67.37	0.07	0.07	0.00	0.07	0.07
2018 Total	130.91	0.13	0.13	0.00	0.13	0.13

2018 Energy Source Category	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	49.23	419.63	178.75	2.62	33.89	33.89
Multi-Family – Low	0.50	4.24	1.80	0.03	0.34	0.34
Multi-Family – Moderate	0.33	2.85	1.21	0.02	0.23	0.23
Neighborhood Serving Centers and Corridors – Low	0.62	5.27	2.24	0.03	0.43	0.43
Neighborhood Serving Centers and Corridors – Moderate	0.40	3.37	1.44	0.02	0.27	0.27
Community Commercial	0.07	0.59	0.25	0.00	0.05	0.05
Transit-Oriented Development - Low	0.22	1.89	0.80	0.01	0.15	0.15
Transit-Oriented Development - Moderate	0.16	1.35	0.58	0.01	0.11	0.11
Neo-Industrial	0.07	0.61	0.26	0.00	0.05	0.05
Industrial	0.12	1.01	0.43	0.01	0.08	0.08
Downtown	0.28	2.39	1.02	0.01	0.19	0.19
Waterfront	0.00	0.04	0.02	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.02	0.00	0.00	0.00
2018 Total	52.00	443.28	188.82	2.77	35.80	35.80

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	7.00	59.81	25.46	0.38	4.84	4.84
Multi-Family – Low	1.08	9.23	3.93	0.06	0.75	0.75
Multi-Family – Moderate	1.88	16.11	6.86	0.10	1.30	1.30
Neighborhood Serving Centers and Corridors – Low	0.72	6.13	2.61	0.04	0.50	0.50
Neighborhood Serving Centers and Corridors – Moderate	1.46	12.45	5.30	0.08	1.01	1.01
Community Commercial	0.46	3.90	1.66	0.02	0.32	0.32
Transit-Oriented Development - Low	0.40	3.39	1.45	0.02	0.27	0.27
Transit-Oriented Development - Moderate	0.28	2.42	1.03	0.02	0.20	0.20
Neo-Industrial	0.21	1.78	0.76	0.01	0.14	0.14
Industrial	0.13	1.12	0.48	0.01	0.09	0.09
Downtown	1.84	15.71	6.69	0.10	1.27	1.27
Waterfront	0.46	3.90	1.66	0.02	0.32	0.32
Regional Serving Facility	0.16	1.37	0.58	0.01	0.11	0.11
2018 Total	16.06	137.31	58.46	0.87	11.11	11.11

Apartments Mid Rise	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	5.72	49.03	20.87	0.38	3.97	3.97
Multi-Family – Low	0.88	7.57	3.22	0.06	0.61	0.61
Multi-Family – Moderate	1.54	13.20	5.62	0.10	1.07	1.07
Neighborhood Serving Centers and Corridors – Low	0.59	5.02	2.14	0.04	0.41	0.41
Neighborhood Serving Centers and Corridors – Moderate	1.19	10.20	4.34	0.08	0.83	0.83
Community Commercial	0.37	3.20	1.36	0.02	0.26	0.26
Transit-Oriented Development - Low	0.32	2.78	1.18	0.02	0.23	0.23
Transit-Oriented Development - Moderate	0.23	1.98	0.84	0.02	0.16	0.16
Neo-Industrial	0.17	1.46	0.62	0.01	0.12	0.12
Industrial	0.11	0.92	0.39	0.01	0.07	0.07
Downtown	1.50	12.88	5.48	0.10	1.04	1.04
Waterfront	0.37	3.20	1.36	0.02	0.26	0.26
Regional Serving Facility	0.13	1.12	0.48	0.01	0.09	0.09
2018 Total	13.14	112.56	47.92	0.88	9.11	9.11

Condos/Townhouse	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.91	62.89	26.73	0.91	0.91	0.91
Multi-Family – Low	0.14	9.71	4.13	0.14	0.14	0.14
Multi-Family – Moderate	0.24	16.94	7.20	0.24	0.24	0.24
Neighborhood Serving Centers and Corridors – Low	0.09	6.44	2.74	0.09	0.09	0.09
Neighborhood Serving Centers and Corridors – Moderate	0.19	13.09	5.56	0.19	0.19	0.19
Community Commercial	0.06	4.10	1.74	0.06	0.06	0.06
Transit-Oriented Development - Low	0.05	3.57	1.52	0.05	0.05	0.05
Transit-Oriented Development - Moderate	0.04	2.54	1.08	0.04	0.04	0.04
Neo-Industrial	0.03	1.87	0.80	0.03	0.03	0.03
Industrial	0.02	1.18	0.50	0.02	0.02	0.02
Downtown	0.24	16.52	7.02	0.24	0.24	0.24
Waterfront	0.06	4.10	1.74	0.06	0.06	0.06
Regional Serving Facility	0.02	1.44	0.61	0.02	0.02	0.02
2018 Total	2.08	144.38	61.37	2.08	2.08	2.08

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
City Park						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.00	0.00	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Golf Course						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.00	0.00	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Library						
Open Space	0.42	3.81	3.20	0.02	0.29	0.29
Founding and Contemporary Neighborhood	1.17	10.67	8.97	0.05	0.81	0.81
Multi-Family – Low	0.01	0.08	0.06	0.00	0.01	0.01
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.18	0.15	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.11	0.09	0.00	0.01	0.01
Community Commercial	0.02	0.17	0.15	0.00	0.01	0.01
Transit-Oriented Development - Low	0.03	0.24	0.20	0.00	0.02	0.02
Transit-Oriented Development - Moderate	0.02	0.20	0.17	0.00	0.02	0.02
Neo-Industrial	0.00	0.02	0.02	0.00	0.00	0.00
Industrial	0.03	0.24	0.20	0.00	0.02	0.02
Downtown	0.08	0.73	0.61	0.00	0.06	0.06
Waterfront	0.07	0.61	0.51	0.00	0.05	0.05
Regional Serving Facility	0.99	9.04	7.59	0.04	0.69	0.69
2018 Total	2.87	26.10	21.93	0.12	1.98	1.98

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Junior College						
Open Space	0.63	5.71	4.79	0.02	0.43	0.43
Founding and Contemporary Neighborhood	1.76	15.96	13.41	0.05	1.21	1.21
Multi-Family – Low	0.01	0.12	0.10	0.00	0.01	0.01
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.03	0.27	0.22	0.00	0.02	0.02
Neighborhood Serving Centers and Corridors – Moderate	0.02	0.16	0.13	0.00	0.01	0.01
Community Commercial	0.03	0.26	0.22	0.00	0.02	0.02
Transit-Oriented Development - Low	0.04	0.36	0.31	0.00	0.03	0.03
Transit-Oriented Development - Moderate	0.03	0.30	0.25	0.00	0.02	0.02
Neo-Industrial	0.00	0.03	0.03	0.00	0.00	0.00
Industrial	0.04	0.36	0.30	0.00	0.03	0.03
Downtown	0.12	1.09	0.92	0.00	0.08	0.08
Waterfront	0.10	0.91	0.77	0.00	0.07	0.07
Regional Serving Facility	1.49	13.52	11.36	0.04	1.03	1.03
2018 Total	4.30	39.04	32.81	0.12	2.97	2.97

General Office Building	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.01	0.05	0.04	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.11	0.99	0.83	0.01	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.03	0.23	0.19	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.04	0.37	0.31	0.00	0.00	0.00
Community Commercial	0.05	0.48	0.40	0.00	0.00	0.00
Transit-Oriented Development - Low	0.03	0.28	0.23	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.01	0.07	0.06	0.00	0.00	0.00
Neo-Industrial	0.00	0.02	0.02	0.00	0.00	0.00
Industrial	0.06	0.52	0.43	0.00	0.00	0.00
Downtown	0.60	5.45	4.58	0.04	0.04	0.04
Waterfront	0.12	1.08	0.91	0.01	0.01	0.01
Regional Serving Facility	12.96	0.01	0.01	0.00	0.01	0.01
2018 Total	14.01	9.55	8.03	0.08	0.09	0.09

Medical Office Building	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.01	0.05	0.04	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.11	0.99	0.83	0.01	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.03	0.23	0.19	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.04	0.37	0.31	0.00	0.00	0.00
Community Commercial	0.05	0.48	0.40	0.00	0.00	0.00
Transit-Oriented Development - Low	0.03	0.28	0.23	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.01	0.07	0.06	0.00	0.00	0.00
Neo-Industrial	0.00	0.02	0.02	0.00	0.00	0.00
Industrial	0.06	0.52	0.43	0.00	0.00	0.00
Downtown	0.60	5.45	4.58	0.04	0.04	0.04
Waterfront	0.12	1.08	0.91	0.01	0.01	0.01
Regional Serving Facility	0.18	1.62	1.36	0.01	0.01	0.01
2018 Total	1.23	11.16	9.38	0.09	0.09	0.09

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Convenience Market						
Open Space	0.00	0.07	0.06	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.53	0.44	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.21	0.17	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.23	0.20	0.01	0.01	0.01
Community Commercial	0.02	0.47	0.39	0.02	0.02	0.02
Transit-Oriented Development - Low	0.01	0.11	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.09	0.07	0.00	0.00	0.00
Neo-Industrial	0.00	0.04	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.22	0.18	0.01	0.01	0.01
Waterfront	0.01	0.23	0.19	0.01	0.01	0.01
Regional Serving Facility	0.00	0.07	0.06	0.00	0.00	0.00
2018 Total	0.12	2.32	1.94	0.12	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Pharmacy/Drug Store						
Open Space	0.00	0.07	0.06	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.53	0.44	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.21	0.17	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.23	0.20	0.01	0.01	0.01
Community Commercial	0.02	0.47	0.39	0.02	0.02	0.02
Transit-Oriented Development - Low	0.01	0.11	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.09	0.07	0.00	0.00	0.00
Neo-Industrial	0.00	0.04	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.22	0.18	0.01	0.01	0.01
Waterfront	0.01	0.23	0.19	0.01	0.01	0.01
Regional Serving Facility	0.00	0.07	0.06	0.00	0.00	0.00
2018 Total	0.12	2.32	1.94	0.12	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Regional Shopping Center						
Open Space	0.00	0.07	0.06	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.53	0.44	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.21	0.17	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.23	0.20	0.01	0.01	0.01
Community Commercial	0.02	0.47	0.39	0.02	0.02	0.02
Transit-Oriented Development - Low	0.01	0.11	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.09	0.07	0.00	0.00	0.00
Neo-Industrial	0.00	0.04	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.22	0.18	0.01	0.01	0.01
Waterfront	0.01	0.23	0.19	0.01	0.01	0.01
Regional Serving Facility	0.00	0.07	0.06	0.00	0.00	0.00
2018 Total	0.12	2.32	1.94	0.12	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Strip Mall						
Open Space	0.00	0.07	0.06	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.53	0.44	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.21	0.17	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.23	0.20	0.01	0.01	0.01
Community Commercial	0.02	0.47	0.39	0.02	0.02	0.02
Transit-Oriented Development - Low	0.01	0.11	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.09	0.07	0.00	0.00	0.00
Neo-Industrial	0.00	0.04	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.22	0.18	0.01	0.01	0.01
Waterfront	0.01	0.23	0.19	0.01	0.01	0.01
Regional Serving Facility	0.00	0.07	0.06	0.00	0.00	0.00
2018 Total	0.12	2.32	1.94	0.12	0.12	0.12

General Light Industrial	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.20	1.78	1.50	0.01	0.14	0.14
Founding and Contemporary Neighborhood	0.12	1.06	0.89	0.01	0.08	0.08
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.16	0.14	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.03	0.27	0.23	0.00	0.02	0.02
Community Commercial	0.19	1.72	1.45	0.01	0.13	0.13
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.01	0.01	0.00	0.00	0.00
Neo-Industrial	0.23	2.13	1.79	0.01	0.16	0.16
Industrial	0.73	6.59	5.54	0.03	0.50	0.50
Downtown	0.01	0.08	0.07	0.00	0.01	0.01
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	1.61	14.66	12.31	0.07	1.11	1.11
2018 Total	3.13	28.48	23.92	0.13	2.16	2.16

Manufacturing	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.20	1.78	1.50	0.01	0.14	0.14
Founding and Contemporary Neighborhood	0.12	1.06	0.89	0.01	0.08	0.08
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.16	0.14	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.03	0.27	0.23	0.00	0.02	0.02
Community Commercial	0.19	1.72	1.45	0.01	0.13	0.13
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.01	0.01	0.00	0.00	0.00
Neo-Industrial	0.23	2.13	1.79	0.01	0.16	0.16
Industrial	0.73	6.59	5.54	0.03	0.50	0.50
Downtown	0.01	0.08	0.07	0.00	0.01	0.01
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	1.61	14.66	12.31	0.07	1.11	1.11
2018 Total	3.13	28.48	23.92	0.13	2.16	2.16

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Research & Development						
Open Space	0.20	1.78	1.50	0.01	0.14	0.14
Founding and Contemporary Neighborhood	0.12	1.06	0.89	0.01	0.08	0.08
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.16	0.14	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.03	0.27	0.23	0.00	0.02	0.02
Community Commercial	0.19	1.72	1.45	0.01	0.13	0.13
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.01	0.01	0.00	0.00	0.00
Neo-Industrial	0.23	2.13	1.79	0.01	0.16	0.16
Industrial	0.73	6.59	5.54	0.03	0.50	0.50
Downtown	0.01	0.08	0.07	0.00	0.01	0.01
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	1.61	14.66	12.31	0.07	1.11	1.11
2018 Total	3.13	28.48	23.92	0.13	2.16	2.16

2040 Area Source Category	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	2,647.01	929.03	5,446.46	5.77	98.67	98.67
Multi-Family – Low	26.17	9.19	53.85	0.06	0.98	0.98
Multi-Family – Moderate	17.60	6.18	36.22	0.04	0.66	0.66
Neighborhood Serving Centers and Corridors – Low	32.55	11.43	66.98	0.07	1.21	1.21
Neighborhood Serving Centers and Corridors – Moderate	20.82	7.31	42.83	0.05	0.78	0.78
Community Commercial	3.64	1.28	7.49	0.01	0.14	0.14
Transit-Oriented Development - Low	11.65	4.09	23.97	0.03	0.43	0.43
Transit-Oriented Development - Moderate	8.35	2.93	17.19	0.02	0.31	0.31
Neo-Industrial	3.77	1.32	7.76	0.01	0.14	0.14
Industrial	6.21	2.18	12.78	0.01	0.23	0.23
Downtown	14.78	5.19	30.41	0.03	0.55	0.55
Waterfront	0.26	0.09	0.53	0.00	0.01	0.01
Regional Serving Facility	0.26	0.09	0.53	0.00	0.01	0.01
2040 Total	2,793.08	980.29	5,747.00	6.09	104.12	104.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	379.30	222.83	1,304.93	1.40	23.69	23.69
Multi-Family – Low	67.15	39.45	231.01	0.25	4.19	4.19
Multi-Family – Moderate	119.62	70.27	411.54	0.44	7.47	7.47
Neighborhood Serving Centers and Corridors – Low	47.86	28.11	164.64	0.18	2.99	2.99
Neighborhood Serving Centers and Corridors – Moderate	96.90	56.92	333.37	0.36	6.05	6.05
Community Commercial	24.23	14.23	83.35	0.09	1.51	1.51
Transit-Oriented Development - Low	65.95	38.74	226.90	0.24	4.12	4.12
Transit-Oriented Development - Moderate	69.68	40.94	239.73	0.26	4.35	4.35
Neo-Industrial	11.92	7.00	41.01	0.04	0.74	0.74
Industrial	6.94	4.08	23.89	0.03	0.43	0.43
Downtown	140.18	82.35	482.26	0.52	8.75	8.75
Waterfront	25.08	14.73	86.29	0.09	1.57	1.57
Regional Serving Facility	30.66	18.01	105.47	0.11	1.91	1.91
2040 Total	1,085.47	637.67	3,734.39	4.00	67.79	67.79

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Apartments Mid Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	184.68	176.07	345.13	0.16	0.90	0.90
Multi-Family – Low	32.69	31.17	61.10	0.03	0.16	0.16
Multi-Family – Moderate	58.24	55.53	108.84	0.05	0.28	0.28
Neighborhood Serving Centers and Corridors – Low	23.30	22.21	43.54	0.02	0.11	0.11
Neighborhood Serving Centers and Corridors – Moderate	47.18	44.98	88.17	0.04	0.23	0.23
Community Commercial	11.80	11.25	22.04	0.01	0.06	0.06
Transit-Oriented Development - Low	32.11	30.61	60.01	0.03	0.16	0.16
Transit-Oriented Development - Moderate	33.93	32.35	63.40	0.03	0.16	0.16
Neo-Industrial	5.80	5.53	10.85	0.00	0.03	0.03
Industrial	3.38	3.22	6.32	0.00	0.02	0.02
Downtown	68.25	65.07	127.55	0.06	0.33	0.33
Waterfront	12.21	11.64	22.82	0.01	0.06	0.06
Regional Serving Facility	14.93	14.23	27.89	0.01	0.07	0.07
2040 Total	528.51	503.87	987.67	0.45	2.56	2.56

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Condos/Townhouse						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	379.30	222.83	1,304.93	1.40	23.69	23.69
Multi-Family – Low	67.15	39.45	231.01	0.25	4.19	4.19
Multi-Family – Moderate	119.62	70.27	411.54	0.44	7.47	7.47
Neighborhood Serving Centers and Corridors – Low	47.86	28.11	164.64	0.18	2.99	2.99
Neighborhood Serving Centers and Corridors – Moderate	96.90	56.92	333.37	0.36	6.05	6.05
Community Commercial	24.23	14.23	83.35	0.09	1.51	1.51
Transit-Oriented Development - Low	65.95	38.74	226.90	0.24	4.12	4.12
Transit-Oriented Development - Moderate	69.68	40.94	239.73	0.26	4.35	4.35
Neo-Industrial	11.92	7.00	41.01	0.04	0.74	0.74
Industrial	6.94	4.08	23.89	0.03	0.43	0.43
Downtown	140.18	82.35	482.26	0.52	8.75	8.75
Waterfront	25.08	14.73	86.29	0.09	1.57	1.57
Regional Serving Facility	30.66	18.01	105.47	0.11	1.91	1.91
2040 Total	1,085.47	637.67	3,734.39	4.00	67.79	67.79

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
City Park						
Open Space	4.21	0.00	0.02	0.00	0.00	0.00
Founding and Contemporary Neighborhood	11.42	0.00	0.05	0.00	0.00	0.00
Multi-Family – Low	0.12	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.23	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.19	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.18	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.44	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.44	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.03	0.00	0.00	0.00	0.00	0.00
Industrial	0.25	0.00	0.00	0.00	0.00	0.00
Downtown	0.95	0.00	0.00	0.00	0.00	0.00
Waterfront	0.65	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	9.70	0.00	0.04	0.00	0.00	0.00
2040 Total	28.83	0.00	0.13	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Golf Course						
Open Space	4.21	0.00	0.02	0.00	0.00	0.00
Founding and Contemporary Neighborhood	11.42	0.00	0.05	0.00	0.00	0.00
Multi-Family – Low	0.12	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.23	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.19	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.18	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.44	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.44	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.03	0.00	0.00	0.00	0.00	0.00
Industrial	0.25	0.00	0.00	0.00	0.00	0.00
Downtown	0.95	0.00	0.00	0.00	0.00	0.00
Waterfront	0.65	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	9.70	0.00	0.04	0.00	0.00	0.00
2040 Total	28.83	0.00	0.13	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Library						
Open Space	18.22	0.02	0.02	0.00	0.02	0.02
Founding and Contemporary Neighborhood	49.39	0.05	0.05	0.00	0.05	0.05
Multi-Family – Low	0.53	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.99	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.84	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.80	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	1.92	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	1.89	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.12	0.00	0.00	0.00	0.00	0.00
Industrial	1.10	0.00	0.00	0.00	0.00	0.00
Downtown	4.12	0.00	0.00	0.00	0.00	0.00
Waterfront	2.82	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	41.93	0.04	0.04	0.00	0.04	0.04
2040 Total	124.67	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Junior College						
Open Space	18.22	0.02	0.02	0.00	0.02	0.02
Founding and Contemporary Neighborhood	49.39	0.05	0.05	0.00	0.05	0.05
Multi-Family – Low	0.53	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.99	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.84	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.80	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	1.92	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	1.89	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.12	0.00	0.00	0.00	0.00	0.00
Industrial	1.10	0.00	0.00	0.00	0.00	0.00
Downtown	4.12	0.00	0.00	0.00	0.00	0.00
Waterfront	2.82	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	41.93	0.04	0.04	0.00	0.04	0.04
2040 Total	124.67	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
General Office Building						
Open Space	0.46	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	8.06	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.01	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.01	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	1.94	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	3.04	0.00	0.00	0.00	0.00	0.00
Community Commercial	4.03	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	2.12	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.50	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.18	0.00	0.00	0.00	0.00	0.00
Industrial	4.27	0.00	0.00	0.00	0.00	0.00
Downtown	60.25	0.06	0.06	0.00	0.06	0.06
Waterfront	9.26	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	12.96	0.01	0.01	0.00	0.01	0.01
2040 Total						

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Medical Office Building						
Open Space	0.46	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	8.06	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.01	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.01	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	1.94	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	3.04	0.00	0.00	0.00	0.00	0.00
Community Commercial	4.03	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	2.12	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.50	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.18	0.00	0.00	0.00	0.00	0.00
Industrial	4.27	0.00	0.00	0.00	0.00	0.00
Downtown	60.25	0.06	0.06	0.00	0.06	0.06
Waterfront	9.26	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	24.26	0.02	0.02	0.00	0.02	0.02
2040 Total	118.40	0.12	0.12	0.00	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Convenience Market						
Open Space	4.17	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	27.26	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.11	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.07	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.08	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	12.29	0.01	0.01	0.00	0.01	0.01
Community Commercial	25.23	0.03	0.03	0.00	0.03	0.03
Transit-Oriented Development - Low	5.32	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	3.81	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.44	0.00	0.00	0.00	0.00	0.00
Industrial	1.85	0.00	0.00	0.00	0.00	0.00
Downtown	13.59	0.01	0.01	0.00	0.01	0.01
Waterfront	12.52	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	7.05	0.01	0.01	0.00	0.01	0.01
2040 Total	126.78	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Pharmacy/Drug Store						
Open Space	4.17	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	27.26	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.11	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.07	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.08	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	12.29	0.01	0.01	0.00	0.01	0.01
Community Commercial	25.23	0.03	0.03	0.00	0.03	0.03
Transit-Oriented Development - Low	5.32	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	3.81	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.44	0.00	0.00	0.00	0.00	0.00
Industrial	1.85	0.00	0.00	0.00	0.00	0.00
Downtown	13.59	0.01	0.01	0.00	0.01	0.01
Waterfront	12.52	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	7.05	0.01	0.01	0.00	0.01	0.01
2040 Total	126.78	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Regional Shopping Center						
Open Space	4.17	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	27.26	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.11	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.07	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.08	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	12.29	0.01	0.01	0.00	0.01	0.01
Community Commercial	25.23	0.03	0.03	0.00	0.03	0.03
Transit-Oriented Development - Low	5.32	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	3.81	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.44	0.00	0.00	0.00	0.00	0.00
Industrial	1.85	0.00	0.00	0.00	0.00	0.00
Downtown	13.59	0.01	0.01	0.00	0.01	0.01
Waterfront	12.52	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	7.05	0.01	0.01	0.00	0.01	0.01
2040 Total	126.78	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Strip Mall						
Open Space	4.17	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	27.26	0.03	0.03	0.00	0.03	0.03
Multi-Family – Low	0.11	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.07	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.08	0.01	0.01	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	12.29	0.01	0.01	0.00	0.01	0.01
Community Commercial	25.23	0.03	0.03	0.00	0.03	0.03
Transit-Oriented Development - Low	5.32	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Moderate	3.81	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	2.44	0.00	0.00	0.00	0.00	0.00
Industrial	1.85	0.00	0.00	0.00	0.00	0.00
Downtown	13.59	0.01	0.01	0.00	0.01	0.01
Waterfront	12.52	0.01	0.01	0.00	0.01	0.01
Regional Serving Facility	7.05	0.01	0.01	0.00	0.01	0.01
2040 Total	126.78	0.13	0.13	0.00	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
General Light Industrial						
Open Space	9.02	0.01	0.01	0.00	0.01	0.01
Founding and Contemporary Neighborhood	4.95	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.78	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	1.31	0.00	0.00	0.00	0.00	0.00
Community Commercial	8.36	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Low	0.05	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.04	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	11.12	0.01	0.01	0.00	0.01	0.01
Industrial	31.39	0.03	0.03	0.00	0.03	0.03
Downtown	0.48	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	126.09	0.13	0.13	0.00	0.13	0.13
2040 Total	193.59	0.20	0.20	0.00	0.20	0.20

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Manufacturing						
Open Space	9.02	0.01	0.01	0.00	0.01	0.01
Founding and Contemporary Neighborhood	4.95	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.78	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	1.31	0.00	0.00	0.00	0.00	0.00
Community Commercial	8.36	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Low	0.05	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.04	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	11.12	0.01	0.01	0.00	0.01	0.01
Industrial	31.39	0.03	0.03	0.00	0.03	0.03
Downtown	0.48	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	126.09	0.13	0.13	0.00	0.13	0.13
2040 Total	193.59	0.20	0.20	0.00	0.20	0.20

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Research & Development						
Open Space	9.02	0.01	0.01	0.00	0.01	0.01
Founding and Contemporary Neighborhood	4.95	0.01	0.01	0.00	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.78	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	1.31	0.00	0.00	0.00	0.00	0.00
Community Commercial	8.36	0.01	0.01	0.00	0.01	0.01
Transit-Oriented Development - Low	0.05	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.04	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	11.12	0.01	0.01	0.00	0.01	0.01
Industrial	31.39	0.03	0.03	0.00	0.03	0.03
Downtown	0.48	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	126.09	0.13	0.13	0.00	0.13	0.13
2040 Total	193.59	0.20	0.20	0.00	0.20	0.20

2040 Energy Source Category	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	50.26	428.47	182.51	2.68	34.61	34.61
Multi-Family – Low	0.50	4.24	1.80	0.03	0.34	0.34
Multi-Family – Moderate	0.33	2.85	1.21	0.02	0.23	0.23
Neighborhood Serving Centers and Corridors – Low	0.62	5.27	2.24	0.03	0.43	0.43
Neighborhood Serving Centers and Corridors – Moderate	0.40	3.37	1.44	0.02	0.27	0.27
Community Commercial	0.07	0.59	0.25	0.00	0.05	0.05
Transit-Oriented Development - Low	0.22	1.89	0.80	0.01	0.15	0.15
Transit-Oriented Development - Moderate	0.16	1.35	0.58	0.01	0.11	0.11
Neo-Industrial	0.07	0.61	0.26	0.00	0.05	0.05
Industrial	0.12	1.01	0.43	0.01	0.08	0.08
Downtown	0.28	2.39	1.02	0.01	0.19	0.19
Waterfront	0.00	0.04	0.02	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.02	0.00	0.00	0.00
2040 Total	53.04	452.11	192.58	2.83	36.52	36.52

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.93	61.07	26.00	0.93	0.93	0.93
Multi-Family – Low	0.16	10.81	4.60	0.16	0.16	0.16
Multi-Family – Moderate	0.29	19.26	8.20	0.29	0.29	0.29
Neighborhood Serving Centers and Corridors – Low	0.12	7.71	3.28	0.12	0.12	0.12
Neighborhood Serving Centers and Corridors – Moderate	0.24	15.60	6.64	0.24	0.24	0.24
Community Commercial	0.06	3.90	1.66	0.06	0.06	0.06
Transit-Oriented Development - Low	0.16	10.62	4.52	0.16	0.16	0.16
Transit-Oriented Development - Moderate	0.17	11.22	4.78	0.17	0.17	0.17
Neo-Industrial	0.03	1.92	0.82	0.03	0.03	0.03
Industrial	0.02	1.12	0.48	0.02	0.02	0.02
Downtown	0.34	22.57	9.61	0.34	0.34	0.34
Waterfront	0.06	4.04	1.72	0.06	0.06	0.06
Regional Serving Facility	0.07	4.94	2.10	0.07	0.07	0.07
2040 Total	2.65	174.78	74.41	2.65	2.65	2.65

Apartments Mid Rise	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	5.84	50.07	21.31	0.39	4.05	4.05
Multi-Family – Low	1.03	8.86	3.77	0.07	0.72	0.72
Multi-Family – Moderate	1.84	15.79	6.72	0.12	1.28	1.28
Neighborhood Serving Centers and Corridors – Low	0.74	6.32	2.69	0.05	0.51	0.51
Neighborhood Serving Centers and Corridors – Moderate	1.49	12.79	5.44	0.10	1.04	1.04
Community Commercial	0.37	3.20	1.36	0.02	0.26	0.26
Transit-Oriented Development - Low	1.02	8.71	3.71	0.07	0.70	0.70
Transit-Oriented Development - Moderate	1.07	9.20	3.92	0.07	0.74	0.74
Neo-Industrial	0.18	1.57	0.67	0.01	0.13	0.13
Industrial	0.11	0.92	0.39	0.01	0.07	0.07
Downtown	2.16	18.50	7.88	0.14	1.50	1.50
Waterfront	0.39	3.31	1.41	0.03	0.27	0.27
Regional Serving Facility	0.47	4.05	1.72	0.03	0.33	0.33
2040 Total	16.73	143.28	60.99	1.12	11.60	11.60

Condos/Townhouse	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.93	64.22	27.30	0.93	0.93	0.93
Multi-Family – Low	0.16	11.37	4.83	0.16	0.16	0.16
Multi-Family – Moderate	0.29	20.25	8.61	0.29	0.29	0.29
Neighborhood Serving Centers and Corridors – Low	0.12	8.10	3.44	0.12	0.12	0.12
Neighborhood Serving Centers and Corridors – Moderate	0.24	16.41	6.97	0.24	0.24	0.24
Community Commercial	0.06	4.10	1.74	0.06	0.06	0.06
Transit-Oriented Development - Low	0.16	11.17	4.75	0.16	0.16	0.16
Transit-Oriented Development - Moderate	0.17	11.80	5.02	0.17	0.17	0.17
Neo-Industrial	0.03	2.02	0.86	0.03	0.03	0.03
Industrial	0.02	1.18	0.50	0.02	0.02	0.02
Downtown	0.34	23.73	10.09	0.34	0.34	0.34
Waterfront	0.06	4.25	1.81	0.06	0.06	0.06
Regional Serving Facility	0.07	5.19	2.21	0.07	0.07	0.07
2040 Total	2.65	183.78	78.12	2.65	2.65	2.65

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
City Park						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2040 Total	0.00	0.00	0.00	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Golf Course						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2040 Total	0.00	0.00	0.00	0.00	0.00	0.00

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Library						
Open Space	0.44	3.96	3.33	0.02	0.30	0.30
Founding and Contemporary Neighborhood	1.18	10.75	9.03	0.05	0.82	0.82
Multi-Family – Low	0.01	0.12	0.10	0.00	0.01	0.01
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.22	0.18	0.00	0.02	0.02
Neighborhood Serving Centers and Corridors – Moderate	0.02	0.18	0.15	0.00	0.01	0.01
Community Commercial	0.02	0.17	0.15	0.00	0.01	0.01
Transit-Oriented Development - Low	0.05	0.42	0.35	0.00	0.03	0.03
Transit-Oriented Development - Moderate	0.05	0.41	0.35	0.00	0.03	0.03
Neo-Industrial	0.00	0.03	0.02	0.00	0.00	0.00
Industrial	0.03	0.24	0.20	0.00	0.02	0.02
Downtown	0.10	0.90	0.75	0.00	0.07	0.07
Waterfront	0.07	0.61	0.52	0.00	0.05	0.05
Regional Serving Facility	1.00	9.12	7.66	0.04	0.69	0.69
2040 Total	2.98	27.12	22.78	0.13	2.06	2.06

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Junior College						
Open Space	0.65	5.93	4.98	0.02	0.45	0.45
Founding and Contemporary Neighborhood	1.77	16.07	13.51	0.05	1.22	1.22
Multi-Family – Low	0.02	0.17	0.14	0.00	0.01	0.01
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.04	0.32	0.27	0.00	0.02	0.02
Neighborhood Serving Centers and Corridors – Moderate	0.03	0.27	0.23	0.00	0.02	0.02
Community Commercial	0.03	0.26	0.22	0.00	0.02	0.02
Transit-Oriented Development - Low	0.07	0.62	0.52	0.00	0.05	0.05
Transit-Oriented Development - Moderate	0.07	0.61	0.52	0.00	0.05	0.05
Neo-Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Industrial	0.04	0.36	0.30	0.00	0.03	0.03
Downtown	0.15	1.34	1.13	0.00	0.10	0.10
Waterfront	0.10	0.92	0.77	0.00	0.07	0.07
Regional Serving Facility	1.50	13.65	11.47	0.04	1.04	1.04
2040 Total	4.47	40.57	34.09	0.13	3.09	3.09

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
General Office Building						
Open Space	0.01	0.06	0.05	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.11	1.01	0.85	0.01	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.03	0.24	0.20	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.04	0.38	0.32	0.00	0.00	0.00
Community Commercial	0.06	0.50	0.42	0.00	0.00	0.00
Transit-Oriented Development - Low	0.03	0.27	0.22	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.01	0.06	0.05	0.00	0.00	0.00
Neo-Industrial	0.00	0.02	0.02	0.00	0.00	0.00
Industrial	0.06	0.53	0.45	0.00	0.00	0.00
Downtown	0.83	7.54	6.33	0.06	0.06	0.06
Waterfront	0.13	1.16	0.97	0.01	0.01	0.01
Regional Serving Facility	12.96	0.01	0.01	0.00	0.01	0.01
2040 Total	14.26	11.79	9.91	0.10	0.11	0.11

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Medical Office Building						
Open Space	0.01	0.06	0.05	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.11	1.01	0.85	0.01	0.01	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.03	0.24	0.20	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.04	0.38	0.32	0.00	0.00	0.00
Community Commercial	0.06	0.50	0.42	0.00	0.00	0.00
Transit-Oriented Development - Low	0.03	0.27	0.22	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.01	0.06	0.05	0.00	0.00	0.00
Neo-Industrial	0.00	0.02	0.02	0.00	0.00	0.00
Industrial	0.06	0.53	0.45	0.00	0.00	0.00
Downtown	0.83	7.54	6.33	0.06	0.06	0.06
Waterfront	0.13	1.16	0.97	0.01	0.01	0.01
Regional Serving Facility	0.33	3.04	2.55	0.02	0.02	0.02
2040 Total	1.63	14.81	12.44	0.12	0.12	0.12

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Convenience Market						
Open Space	0.00	0.08	0.07	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.54	0.45	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.22	0.18	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.24	0.20	0.01	0.01	0.01
Community Commercial	0.03	0.50	0.42	0.03	0.03	0.03
Transit-Oriented Development - Low	0.01	0.10	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.08	0.06	0.00	0.00	0.00
Neo-Industrial	0.00	0.05	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.27	0.22	0.01	0.01	0.01
Waterfront	0.01	0.25	0.21	0.01	0.01	0.01
Regional Serving Facility	0.01	0.14	0.12	0.01	0.01	0.01
2040 Total	0.13	2.50	2.10	0.13	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Pharmacy/Drug Store						
Open Space	0.00	0.08	0.07	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.54	0.45	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.22	0.18	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.24	0.20	0.01	0.01	0.01
Community Commercial	0.03	0.50	0.42	0.03	0.03	0.03
Transit-Oriented Development - Low	0.01	0.10	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.08	0.06	0.00	0.00	0.00
Neo-Industrial	0.00	0.05	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.27	0.22	0.01	0.01	0.01
Waterfront	0.01	0.25	0.21	0.01	0.01	0.01
Regional Serving Facility	0.01	0.14	0.12	0.01	0.01	0.01
2040 Total	0.13	2.50	2.10	0.13	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Regional Shopping Center						
Open Space	0.00	0.08	0.07	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.54	0.45	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.22	0.18	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.24	0.20	0.01	0.01	0.01
Community Commercial	0.03	0.50	0.42	0.03	0.03	0.03
Transit-Oriented Development - Low	0.01	0.10	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.08	0.06	0.00	0.00	0.00
Neo-Industrial	0.00	0.05	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.27	0.22	0.01	0.01	0.01
Waterfront	0.01	0.25	0.21	0.01	0.01	0.01
Regional Serving Facility	0.01	0.14	0.12	0.01	0.01	0.01
2040 Total	0.13	2.50	2.10	0.13	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Strip Mall						
Open Space	0.00	0.08	0.07	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.03	0.54	0.45	0.03	0.03	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.01	0.22	0.18	0.01	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.24	0.20	0.01	0.01	0.01
Community Commercial	0.03	0.50	0.42	0.03	0.03	0.03
Transit-Oriented Development - Low	0.01	0.10	0.09	0.01	0.01	0.01
Transit-Oriented Development - Moderate	0.00	0.08	0.06	0.00	0.00	0.00
Neo-Industrial	0.00	0.05	0.04	0.00	0.00	0.00
Industrial	0.00	0.04	0.03	0.00	0.00	0.00
Downtown	0.01	0.27	0.22	0.01	0.01	0.01
Waterfront	0.01	0.25	0.21	0.01	0.01	0.01
Regional Serving Facility	0.01	0.14	0.12	0.01	0.01	0.01
2040 Total	0.13	2.50	2.10	0.13	0.13	0.13

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
General Light Industrial						
Open Space	0.22	1.96	1.65	0.01	0.15	0.15
Founding and Contemporary Neighborhood	0.12	1.08	0.90	0.01	0.08	0.08
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.17	0.14	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.03	0.28	0.24	0.00	0.02	0.02
Community Commercial	0.20	1.82	1.53	0.01	0.14	0.14
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.01	0.01	0.00	0.00	0.00
Neo-Industrial	0.27	2.42	2.03	0.01	0.18	0.18
Industrial	0.75	6.83	5.74	0.03	0.52	0.52
Downtown	0.01	0.10	0.09	0.00	0.01	0.01
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	3.02	27.43	23.04	0.13	2.09	2.09
2040 Total	4.63	42.12	35.38	0.20	3.20	3.20

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Manufacturing						
Open Space	0.22	1.96	1.65	0.01	0.15	0.15
Founding and Contemporary Neighborhood	0.12	1.08	0.90	0.01	0.08	0.08
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.17	0.14	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.03	0.28	0.24	0.00	0.02	0.02
Community Commercial	0.20	1.82	1.53	0.01	0.14	0.14
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.01	0.01	0.00	0.00	0.00
Neo-Industrial	0.27	2.42	2.03	0.01	0.18	0.18
Industrial	0.75	6.83	5.74	0.03	0.52	0.52
Downtown	0.01	0.10	0.09	0.00	0.01	0.01
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	3.02	27.43	23.04	0.13	2.09	2.09
2040 Total	4.63	42.12	35.38	0.20	3.20	3.20

	Pollutant Emissions, lbs/day					
	ROG	NOX	CO	SOX	PM10	PM2.5
Research & Development						
Open Space	0.22	1.96	1.65	0.01	0.15	0.15
Founding and Contemporary Neighborhood	0.12	1.08	0.90	0.01	0.08	0.08
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.17	0.14	0.00	0.01	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.03	0.28	0.24	0.00	0.02	0.02
Community Commercial	0.20	1.82	1.53	0.01	0.14	0.14
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.01	0.01	0.00	0.00	0.00
Neo-Industrial	0.27	2.42	2.03	0.01	0.18	0.18
Industrial	0.75	6.83	5.74	0.03	0.52	0.52
Downtown	0.01	0.10	0.09	0.00	0.01	0.01
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	3.02	27.43	23.04	0.13	2.09	2.09
2040 Total	4.63	42.12	35.38	0.20	3.20	3.20

Table K: Buildout Year 2040 City of Long Beach Major Areas of Change Regional Criteria Air Pollutant Emissions Inventory

Sector	Criteria Air Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Year 2018						
Transportation (2018 emission factors)[1]	4,123	38,622	8,474	85	1,827	541
Energy, Residential (natural gas use)[2]	83	838	357	7	58	58
Energy, Commercial + Industrial (natural gas use)[2]	24	106	89	1	7	7
Energy, Public Facilities/Institutional (natural gas use)[2]	7	65	55	0	5	5
Area, Residential, Landscaping/Consumer Products[3]	8,837	2,990	46,580	82	5,478	5,478
Area, Commerical + Industrial Landscaping/Consumer Products[3]	952	1	1	0	1	1
Area, Public Facilities/Institutional Landscaping/Consumer Products[3]	295	0	1	0	0	0
Existing Forecast Land Uses Total	**14,321**	**42,621**	**55,556**	**174**	**7,377**	**6,091**
Future Year 2040 Existing General Plan (No Project)						
Transportation (2040 emission factors)[1]	1,516	16,473	3,340	32	1,651	127
Energy, Residential (natural gas use)[2]	72	888	378	8	51	51
Energy, Commercial + Industrial (natural gas use)[2]	30	163	137	1	10	10
Energy, Public Facilities/Institutional (natural gas use)[2]	7	68	57	0	5	5
Area, Residential, Landscaping/Consumer Products[3]	5,135	2,524	13,085	13	224	224
Area, Commerical + Industrial Landscaping/Consumer Products[3]	1,219	1	1	0	1	1
Area, Public Facilities/Institutional Landscaping/Consumer Products[3]	307	0	1	0	0	0
Future Year 2040 Existing General Plan (No Project) Total	**8,287**	**20,117**	**16,998**	**56**	**1,943**	**420**
LUE/UDE Year 2040						
Transportation (2040 emission factors)[1]	1,537	16,698	3,385	33	1,673	129
Energy, Residential (natural gas use)[2]	75	954	406	9	53	53
Energy, Commercial + Industrial (natural gas use)[2]	30	163	137	1	10	10
Energy, Public Facilities/Institutional (natural gas use)[2]	7	68	57	0	5	5
Area, Residential, Landscaping/Consumer Products[3]	5,493	2,759	14,203	15	242	242
Area, Commerical + Industrial Landscaping/Consumer Products[3]	1,219	1	1	0	1	1
Area, Public Facilities/Institutional Landscaping/Consumer Products[3]	307	0	1	0	0	0
Future with Project Total	**8,668**	**20,644**	**18,190**	**58**	**1,986**	**442**
Differences in Emissions for Proposed 2040 GP LUE/UDE vs Existing 2018 GP	**-5,653**	**-21,977**	**-37,366**	**-116**	**-5,391**	**-5,649**
SCAQMD Regional Significance Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
Differences in Emissions for Proposed 2040 GP LUE/UDE vs Existing GP 2040 (No Project)	**381**	**527**	**1,193**	**2**	**43**	**22**
SCAQMD Regional Significance Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Significant?	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (2019).

2018 GHG Emissions	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	4,051.07	13,373.79	17,424.86	20.17	20.17	17,995.80
Multi-Family – Low	40.90	135.01	175.91	0.20	0.20	181.67
Multi-Family – Moderate	27.51	90.82	118.33	0.14	0.14	122.20
Neighborhood Serving Centers and Corridors – Low	50.87	167.93	218.80	0.25	0.25	225.97
Neighborhood Serving Centers and Corridors – Moderate	32.53	107.39	139.92	0.16	0.16	144.50
Community Commercial	5.69	18.78	24.47	0.03	0.03	25.27
Transit-Oriented Development - Low	18.21	60.10	78.31	0.09	0.09	80.87
Transit-Oriented Development - Moderate	13.05	43.09	56.14	0.07	0.07	57.98
Neo-Industrial	5.89	19.45	25.34	0.03	0.03	26.17
Industrial	9.71	32.04	41.75	0.05	0.05	43.11
Downtown	23.09	76.23	99.33	0.12	0.12	102.58
Waterfront	0.40	1.33	1.73	0.00	0.00	1.78
Regional Serving Facility	0.40	1.33	1.73	0.00	0.00	1.78
2018 Total	4,279.32	14,127.28	18,406.60	21.31	21.31	19,009.71

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	970.30	3,203.59	4,173.89	0.91	0.91	4,310.90
Multi-Family – Low	149.80	494.59	644.39	0.14	0.14	665.54
Multi-Family – Moderate	261.30	862.71	1,124.01	0.24	0.24	1,160.90
Neighborhood Serving Centers and Corridors – Low	99.41	328.20	427.61	0.09	0.09	441.65
Neighborhood Serving Centers and Corridors – Moderate	201.94	666.72	868.65	0.19	0.19	897.17
Community Commercial	63.29	208.96	272.25	0.06	0.06	281.18
Transit-Oriented Development - Low	55.08	181.85	236.93	0.05	0.05	244.71
Transit-Oriented Development - Moderate	39.26	129.63	168.89	0.04	0.04	174.44
Neo-Industrial	28.91	95.46	124.37	0.03	0.03	128.45
Industrial	18.14	59.88	78.02	0.02	0.02	80.58
Downtown	254.83	841.35	1,096.18	0.24	0.24	1,132.16
Waterfront	63.29	208.96	272.25	0.06	0.06	281.18
Regional Serving Facility	22.17	73.21	95.39	0.02	0.02	98.52
2018 Total	2,227.71	7,355.11	9,582.82	2.08	2.08	9,897.37

Apartments Mid Rise	Area Sources GHG Emissions, MT/Year Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	3,203.60	3,203.60	0.38	0.38	3,227.21
Multi-Family – Low	0.00	494.59	494.59	0.06	0.06	498.24
Multi-Family – Moderate	0.00	862.71	862.71	0.10	0.10	869.07
Neighborhood Serving Centers and Corridors – Low	0.00	328.20	328.20	0.04	0.04	330.62
Neighborhood Serving Centers and Corridors – Moderate	0.00	666.72	666.72	0.08	0.08	671.63
Community Commercial	0.00	208.96	208.96	0.02	0.02	210.50
Transit-Oriented Development - Low	0.00	181.85	181.85	0.02	0.02	183.19
Transit-Oriented Development - Moderate	0.00	129.63	129.63	0.02	0.02	130.59
Neo-Industrial	0.00	95.46	95.46	0.01	0.01	96.16
Industrial	0.00	59.88	59.88	0.01	0.01	60.32
Downtown	0.00	841.35	841.35	0.10	0.10	847.56
Waterfront	0.00	208.96	208.96	0.02	0.02	210.50
Regional Serving Facility	0.00	73.21	73.21	0.01	0.01	73.75
2018 Total	0.00	7,355.13	7,355.13	0.88	0.88	7,409.35

Condos/Townhouse	Area Sources GHG Emissions, MT/Year Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	408.55	1,348.88	1,757.43	0.38	0.38	1,815.12
Multi-Family – Low	63.07	208.25	271.32	0.06	0.06	280.23
Multi-Family – Moderate	110.02	363.25	473.27	0.10	0.10	488.80
Neighborhood Serving Centers and Corridors – Low	41.86	138.19	180.05	0.04	0.04	185.96
Neighborhood Serving Centers and Corridors – Moderate	85.03	280.72	365.75	0.08	0.08	377.75
Community Commercial	26.65	87.98	114.63	0.02	0.02	118.39
Transit-Oriented Development - Low	23.19	76.57	99.76	0.02	0.02	103.04
Transit-Oriented Development - Moderate	16.53	54.58	71.11	0.02	0.02	73.45
Neo-Industrial	12.17	40.19	52.37	0.01	0.01	54.08
Industrial	7.64	25.21	32.85	0.01	0.01	33.93
Downtown	107.30	354.25	461.55	0.10	0.10	476.70
Waterfront	26.65	87.98	114.63	0.02	0.02	118.39
Regional Serving Facility	9.34	30.83	40.16	0.01	0.01	41.48
2018 Total	937.98	3,096.89	4,034.87	0.88	0.88	4,167.32

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
City Park						
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Golf Course						
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Library						
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Junior College						
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Office Building						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.04	0.04	0.00	0.00	0.04
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.01	0.01	0.00	0.00	0.01
2018 Total	0.00	0.09	0.09	0.00	0.00	0.09

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Medical Office Building						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.04	0.04	0.00	0.00	0.04
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.01	0.01	0.00	0.00	0.01
2018 Total	0.00	0.09	0.09	0.00	0.00	0.09

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Convenience Market						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.02	0.02	0.00	0.00	0.02
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Pharmacy/Drug Store						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.02	0.02	0.00	0.00	0.02
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Regional Shopping Center						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.02	0.02	0.00	0.00	0.02
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Strip Mall						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.02	0.02	0.00	0.00	0.02
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.12	0.12	0.00	0.00	0.12

General Light Industrial	Area Sources GHG Emissions, MT/Year Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.01	0.01	0.00	0.00	0.01
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.01	0.01	0.00	0.00	0.01
Industrial	0.00	0.03	0.03	0.00	0.00	0.03
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.07	0.07	0.00	0.00	0.07
2018 Total	0.00	0.13	0.13	0.00	0.00	0.13

Manufacturing	Area Sources GHG Emissions, MT/Year Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.01	0.01	0.00	0.00	0.01
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.01	0.01	0.00	0.00	0.01
Industrial	0.00	0.03	0.03	0.00	0.00	0.03
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.07	0.07	0.00	0.00	0.07
2018 Total	0.00	0.13	0.13	0.00	0.00	0.13

	Area Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Research & Development						
Open Space	0.00	0.01	0.01	0.00	0.00	0.01
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.01	0.01	0.00	0.00	0.01
Industrial	0.00	0.03	0.03	0.00	0.00	0.03
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.07	0.07	0.00	0.00	0.07
2018 Total	0.00	0.13	0.13	0.00	0.00	0.13

2018 GHG Emissions	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	247,028.71	247,028.71	20.17	20.17	248,122.17
Multi-Family – Low	0.00	2,493.80	2,493.80	0.20	0.20	2,504.84
Multi-Family – Moderate	0.00	1,677.50	1,677.50	0.14	0.14	1,684.92
Neighborhood Serving Centers and Corridors – Low	0.00	3,101.94	3,101.94	0.25	0.25	3,115.67
Neighborhood Serving Centers and Corridors – Moderate	0.00	1,983.61	1,983.61	0.16	0.16	1,992.39
Community Commercial	0.00	346.93	346.93	0.03	0.03	348.46
Transit-Oriented Development - Low	0.00	1,110.17	1,110.17	0.09	0.09	1,115.08
Transit-Oriented Development - Moderate	0.00	795.89	795.89	0.07	0.07	799.42
Neo-Industrial	0.00	359.17	359.17	0.03	0.03	360.76
Industrial	0.00	591.82	591.82	0.05	0.05	594.44
Downtown	0.00	1,408.12	1,408.12	0.12	0.12	1,414.35
Waterfront	0.00	24.49	24.49	0.00	0.00	24.60
Regional Serving Facility	0.00	24.49	24.49	0.00	0.00	24.60
2018 Total	0.00	260,946.62	260,946.62	21.31	21.31	262,101.70

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	32,230.25	32,230.25	0.91	0.91	32,375.41
Multi-Family – Low	0.00	4,975.88	4,975.88	0.14	0.14	4,998.30
Multi-Family – Moderate	0.00	8,679.46	8,679.46	0.24	0.24	8,718.55
Neighborhood Serving Centers and Corridors – Low	0.00	3,301.94	3,301.94	0.09	0.09	3,316.81
Neighborhood Serving Centers and Corridors – Moderate	0.00	6,707.63	6,707.63	0.19	0.19	6,737.84
Community Commercial	0.00	2,102.25	2,102.25	0.06	0.06	2,111.72
Transit-Oriented Development - Low	0.00	1,829.55	1,829.55	0.05	0.05	1,837.80
Transit-Oriented Development - Moderate	0.00	1,304.18	1,304.18	0.04	0.04	1,310.05
Neo-Industrial	0.00	960.35	960.35	0.03	0.03	964.67
Industrial	0.00	602.44	602.44	0.02	0.02	605.15
Downtown	0.00	8,464.56	8,464.56	0.24	0.24	8,502.69
Waterfront	0.00	2,102.25	2,102.25	0.06	0.06	2,111.72
Regional Serving Facility	0.00	736.56	736.56	0.02	0.02	739.88
2018 Total	0.00	73,997.30	73,997.30	2.08	2.08	74,330.58

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Mid Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	29,064.89	29,064.89	0.38	0.38	29,193.35
Multi-Family – Low	0.00	4,487.20	4,487.20	0.06	0.06	4,507.03
Multi-Family – Moderate	0.00	7,827.04	7,827.04	0.10	0.10	7,861.63
Neighborhood Serving Centers and Corridors – Low	0.00	2,977.66	2,977.66	0.04	0.04	2,990.82
Neighborhood Serving Centers and Corridors – Moderate	0.00	6,048.86	6,048.86	0.08	0.08	6,075.60
Community Commercial	0.00	1,895.78	1,895.78	0.02	0.02	1,904.16
Transit-Oriented Development - Low	0.00	1,649.87	1,649.87	0.02	0.02	1,657.16
Transit-Oriented Development - Moderate	0.00	1,176.09	1,176.09	0.02	0.02	1,181.29
Neo-Industrial	0.00	866.03	866.03	0.01	0.01	869.86
Industrial	0.00	543.28	543.28	0.01	0.01	545.68
Downtown	0.00	7,633.25	7,633.25	0.10	0.10	7,666.99
Waterfront	0.00	1,895.78	1,895.78	0.02	0.02	1,904.16
Regional Serving Facility	0.00	664.23	664.23	0.01	0.01	667.16
2018 Total	0.00	66,729.96	66,729.96	0.88	0.88	67,024.89

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Condos/Townhouse						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	15,398.37	15,398.37	0.38	0.38	15,466.71
Multi-Family – Low	0.00	2,377.29	2,377.29	0.06	0.06	2,387.84
Multi-Family – Moderate	0.00	4,146.71	4,146.71	0.10	0.10	4,165.11
Neighborhood Serving Centers and Corridors – Low	0.00	1,577.54	1,577.54	0.04	0.04	1,584.54
Neighborhood Serving Centers and Corridors – Moderate	0.00	3,204.65	3,204.65	0.08	0.08	3,218.87
Community Commercial	0.00	1,004.37	1,004.37	0.02	0.02	1,008.83
Transit-Oriented Development - Low	0.00	874.09	874.09	0.02	0.02	877.97
Transit-Oriented Development - Moderate	0.00	623.09	623.09	0.02	0.02	625.85
Neo-Industrial	0.00	458.82	458.82	0.01	0.01	460.85
Industrial	0.00	287.82	287.82	0.01	0.01	289.10
Downtown	0.00	4,044.04	4,044.04	0.10	0.10	4,061.99
Waterfront	0.00	1,004.37	1,004.37	0.02	0.02	1,008.83
Regional Serving Facility	0.00	351.90	351.90	0.01	0.01	353.46
2018 Total	0.00	35,353.07	35,353.07	0.88	0.88	35,509.95

City Park	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.00	0.00	0.00	0.00	0.00

Golf Course	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2018 Total	0.00	0.00	0.00	0.00	0.00	0.00

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Library						
Open Space	0.00	3,532.16	3,532.16	0.02	0.02	3,546.59
Founding and Contemporary Neighborhood	0.00	9,883.96	9,883.96	0.05	0.05	9,924.33
Multi-Family – Low	0.00	71.48	71.48	0.00	0.00	71.77
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	164.79	164.79	0.00	0.00	165.47
Neighborhood Serving Centers and Corridors – Moderate	0.00	97.93	97.93	0.00	0.00	98.33
Community Commercial	0.00	160.74	160.74	0.00	0.00	161.40
Transit-Oriented Development - Low	0.00	225.13	225.13	0.00	0.00	226.05
Transit-Oriented Development - Moderate	0.00	183.59	183.59	0.00	0.00	184.34
Neo-Industrial	0.00	21.50	21.50	0.00	0.00	21.59
Industrial	0.00	221.19	221.19	0.00	0.00	222.09
Downtown	0.00	676.29	676.29	0.00	0.00	679.05
Waterfront	0.00	564.74	564.74	0.00	0.00	567.04
Regional Serving Facility	0.00	8,368.61	8,368.61	0.04	0.04	8,402.80
2018 Total	0.00	24,172.11	24,172.11	0.12	0.12	24,270.86

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Junior College						
Open Space	0.00	3,638.14	3,638.14	0.02	0.02	3,653.84
Founding and Contemporary Neighborhood	0.00	10,180.52	10,180.52	0.05	0.05	10,224.44
Multi-Family – Low	0.00	73.62	73.62	0.00	0.00	73.94
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	169.74	169.74	0.00	0.00	170.47
Neighborhood Serving Centers and Corridors – Moderate	0.00	100.87	100.87	0.00	0.00	101.30
Community Commercial	0.00	165.57	165.57	0.00	0.00	166.28
Transit-Oriented Development - Low	0.00	231.88	231.88	0.00	0.00	232.88
Transit-Oriented Development - Moderate	0.00	189.10	189.10	0.00	0.00	189.92
Neo-Industrial	0.00	22.14	22.14	0.00	0.00	22.24
Industrial	0.00	227.83	227.83	0.00	0.00	228.81
Downtown	0.00	696.58	696.58	0.00	0.00	699.58
Waterfront	0.00	581.68	581.68	0.00	0.00	584.19
Regional Serving Facility	0.00	8,619.71	8,619.71	0.04	0.04	8,656.90
2018 Total	0.00	24,897.38	24,897.38	0.12	0.12	25,004.80

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Office Building						
Open Space	0.00	87.55	87.55	0.00	0.00	87.89
Founding and Contemporary Neighborhood	0.00	1,666.28	1,666.28	0.01	0.01	1,672.71
Multi-Family – Low	0.00	4.93	4.93	0.00	0.00	4.95
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	388.70	388.70	0.00	0.00	390.20
Neighborhood Serving Centers and Corridors – Moderate	0.00	616.61	616.61	0.00	0.00	618.99
Community Commercial	0.00	801.10	801.10	0.00	0.00	804.19
Transit-Oriented Development - Low	0.00	467.33	467.33	0.00	0.00	469.13
Transit-Oriented Development - Moderate	0.00	122.05	122.05	0.00	0.00	122.53
Neo-Industrial	0.00	33.33	33.33	0.00	0.00	33.46
Industrial	0.00	865.41	865.41	0.00	0.00	868.75
Downtown	0.00	9,152.46	9,152.46	0.04	0.04	9,187.76
Waterfront	0.00	1,812.51	1,812.51	0.01	0.01	1,819.50
Regional Serving Facility	0.00	2,722.76	2,722.76	0.01	0.01	2,733.26
2018 Total	0.00	18,741.02	18,741.02	0.09	0.09	18,813.32

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Medical Office Building						
Open Space	0.00	87.55	87.55	0.00	0.00	87.89
Founding and Contemporary Neighborhood	0.00	1,666.28	1,666.28	0.01	0.01	1,672.71
Multi-Family – Low	0.00	4.93	4.93	0.00	0.00	4.95
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	388.70	388.70	0.00	0.00	390.20
Neighborhood Serving Centers and Corridors – Moderate	0.00	616.61	616.61	0.00	0.00	618.99
Community Commercial	0.00	801.10	801.10	0.00	0.00	804.19
Transit-Oriented Development - Low	0.00	467.33	467.33	0.00	0.00	469.13
Transit-Oriented Development - Moderate	0.00	122.05	122.05	0.00	0.00	122.53
Neo-Industrial	0.00	33.33	33.33	0.00	0.00	33.46
Industrial	0.00	865.41	865.41	0.00	0.00	868.75
Downtown	0.00	9,152.46	9,152.46	0.04	0.04	9,187.76
Waterfront	0.00	1,812.51	1,812.51	0.01	0.01	1,819.50
Regional Serving Facility	0.00	2,722.76	2,722.76	0.01	0.01	2,733.26
2018 Total	0.00	18,741.02	18,741.02	0.09	0.09	18,813.32

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Convenience Market						
Open Space	0.00	744.91	744.91	0.00	0.00	747.61
Founding and Contemporary Neighborhood	0.00	5,270.09	5,270.09	0.03	0.03	5,289.19
Multi-Family – Low	0.00	46.96	46.96	0.00	0.00	47.13
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	2,074.09	2,074.09	0.01	0.01	2,081.60
Neighborhood Serving Centers and Corridors – Moderate	0.00	2,327.77	2,327.77	0.01	0.01	2,336.20
Community Commercial	0.00	4,689.98	4,689.98	0.02	0.02	4,706.98
Transit-Oriented Development - Low	0.00	1,095.03	1,095.03	0.01	0.01	1,099.00
Transit-Oriented Development - Moderate	0.00	863.85	863.85	0.00	0.00	866.98
Neo-Industrial	0.00	421.23	421.23	0.00	0.00	422.75
Industrial	0.00	350.89	350.89	0.00	0.00	352.16
Downtown	0.00	2,144.20	2,144.20	0.01	0.01	2,151.97
Waterfront	0.00	2,289.80	2,289.80	0.01	0.01	2,298.10
Regional Serving Facility	0.00	740.08	740.08	0.00	0.00	742.76
2018 Total	0.00	23,058.87	23,058.87	0.12	0.12	23,142.45

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Pharmacy/Drug Store						
Open Space	0.00	744.91	744.91	0.00	0.00	747.61
Founding and Contemporary Neighborhood	0.00	5,270.09	5,270.09	0.03	0.03	5,289.19
Multi-Family – Low	0.00	46.96	46.96	0.00	0.00	47.13
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	2,074.09	2,074.09	0.01	0.01	2,081.60
Neighborhood Serving Centers and Corridors – Moderate	0.00	2,327.77	2,327.77	0.01	0.01	2,336.20
Community Commercial	0.00	4,689.98	4,689.98	0.02	0.02	4,706.98
Transit-Oriented Development - Low	0.00	1,095.03	1,095.03	0.01	0.01	1,099.00
Transit-Oriented Development - Moderate	0.00	863.85	863.85	0.00	0.00	866.98
Neo-Industrial	0.00	421.23	421.23	0.00	0.00	422.75
Industrial	0.00	350.89	350.89	0.00	0.00	352.16
Downtown	0.00	2,144.20	2,144.20	0.01	0.01	2,151.97
Waterfront	0.00	2,289.80	2,289.80	0.01	0.01	2,298.10
Regional Serving Facility	0.00	740.08	740.08	0.00	0.00	742.76
2018 Total	0.00	23,058.87	23,058.87	0.12	0.12	23,142.45

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Regional Shopping Center						
Open Space	0.00	744.91	744.91	0.00	0.00	747.61
Founding and Contemporary Neighborhood	0.00	5,270.09	5,270.09	0.03	0.03	5,289.19
Multi-Family – Low	0.00	46.96	46.96	0.00	0.00	47.13
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	2,074.09	2,074.09	0.01	0.01	2,081.60
Neighborhood Serving Centers and Corridors – Moderate	0.00	2,327.77	2,327.77	0.01	0.01	2,336.20
Community Commercial	0.00	4,689.98	4,689.98	0.02	0.02	4,706.98
Transit-Oriented Development - Low	0.00	1,095.03	1,095.03	0.01	0.01	1,099.00
Transit-Oriented Development - Moderate	0.00	863.85	863.85	0.00	0.00	866.98
Neo-Industrial	0.00	421.23	421.23	0.00	0.00	422.75
Industrial	0.00	350.89	350.89	0.00	0.00	352.16
Downtown	0.00	2,144.20	2,144.20	0.01	0.01	2,151.97
Waterfront	0.00	2,289.80	2,289.80	0.01	0.01	2,298.10
Regional Serving Facility	0.00	740.08	740.08	0.00	0.00	742.76
2018 Total	0.00	23,058.87	23,058.87	0.12	0.12	23,142.45

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Strip Mall						
Open Space	0.00	744.91	744.91	0.00	0.00	747.61
Founding and Contemporary Neighborhood	0.00	5,270.09	5,270.09	0.03	0.03	5,289.19
Multi-Family – Low	0.00	46.96	46.96	0.00	0.00	47.13
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	2,074.09	2,074.09	0.01	0.01	2,081.60
Neighborhood Serving Centers and Corridors – Moderate	0.00	2,327.77	2,327.77	0.01	0.01	2,336.20
Community Commercial	0.00	4,689.98	4,689.98	0.02	0.02	4,706.98
Transit-Oriented Development - Low	0.00	1,095.03	1,095.03	0.01	0.01	1,099.00
Transit-Oriented Development - Moderate	0.00	863.85	863.85	0.00	0.00	866.98
Neo-Industrial	0.00	421.23	421.23	0.00	0.00	422.75
Industrial	0.00	350.89	350.89	0.00	0.00	352.16
Downtown	0.00	2,144.20	2,144.20	0.01	0.01	2,151.97
Waterfront	0.00	2,289.80	2,289.80	0.01	0.01	2,298.10
Regional Serving Facility	0.00	740.08	740.08	0.00	0.00	742.76
2018 Total	0.00	23,058.87	23,058.87	0.12	0.12	23,142.45

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Light Industrial						
Open Space	0.00	1,652.45	1,652.45	0.01	0.01	1,659.20
Founding and Contemporary Neighborhood	0.00	981.41	981.41	0.01	0.01	985.42
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	149.79	149.79	0.00	0.00	150.40
Neighborhood Serving Centers and Corridors – Moderate	0.00	254.55	254.55	0.00	0.00	255.59
Community Commercial	0.00	1,594.36	1,594.36	0.01	0.01	1,600.88
Transit-Oriented Development - Low	0.00	11.26	11.26	0.00	0.00	11.30
Transit-Oriented Development - Moderate	0.00	9.01	9.01	0.00	0.00	9.04
Neo-Industrial	0.00	1,968.98	1,968.98	0.01	0.01	1,977.02
Industrial	0.00	6,103.70	6,103.70	0.03	0.03	6,128.63
Downtown	0.00	74.14	74.14	0.00	0.00	74.45
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	13,571.98	13,571.98	0.07	0.07	13,627.43
2018 Total	0.00	26,371.63	26,371.63	0.13	0.13	26,479.35

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Manufacturing						
Open Space	0.00	1,652.45	1,652.45	0.01	0.01	1,659.20
Founding and Contemporary Neighborhood	0.00	981.41	981.41	0.01	0.01	985.42
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	149.79	149.79	0.00	0.00	150.40
Neighborhood Serving Centers and Corridors – Moderate	0.00	254.55	254.55	0.00	0.00	255.59
Community Commercial	0.00	1,594.36	1,594.36	0.01	0.01	1,600.88
Transit-Oriented Development - Low	0.00	11.26	11.26	0.00	0.00	11.30
Transit-Oriented Development - Moderate	0.00	9.01	9.01	0.00	0.00	9.04
Neo-Industrial	0.00	1,968.98	1,968.98	0.01	0.01	1,977.02
Industrial	0.00	6,103.70	6,103.70	0.03	0.03	6,128.63
Downtown	0.00	74.14	74.14	0.00	0.00	74.45
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	13,571.98	13,571.98	0.07	0.07	13,627.43
2018 Total	0.00	26,371.63	26,371.63	0.13	0.13	26,479.35

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Research & Development						
Open Space	0.00	1,652.45	1,652.45	0.01	0.01	1,659.20
Founding and Contemporary Neighborhood	0.00	981.41	981.41	0.01	0.01	985.42
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	149.79	149.79	0.00	0.00	150.40
Neighborhood Serving Centers and Corridors – Moderate	0.00	254.55	254.55	0.00	0.00	255.59
Community Commercial	0.00	1,594.36	1,594.36	0.01	0.01	1,600.88
Transit-Oriented Development - Low	0.00	11.26	11.26	0.00	0.00	11.30
Transit-Oriented Development - Moderate	0.00	9.01	9.01	0.00	0.00	9.04
Neo-Industrial	0.00	1,968.98	1,968.98	0.01	0.01	1,977.02
Industrial	0.00	6,103.70	6,103.70	0.03	0.03	6,128.63
Downtown	0.00	74.14	74.14	0.00	0.00	74.45
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	13,571.98	13,571.98	0.07	0.07	13,627.43
2018 Total	0.00	26,371.63	26,371.63	0.13	0.13	26,479.35

2018 GHG Emissions	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	15,110.83	0.00	15,110.83	893.74	0.00	37,438.13
Multi-Family – Low	152.55	0.00	152.55	9.02	0.00	377.94
Multi-Family – Moderate	102.61	0.00	102.61	6.07	0.00	254.23
Neighborhood Serving Centers and Corridors – Low	189.75	0.00	189.75	11.22	0.00	470.11
Neighborhood Serving Centers and Corridors – Moderate	121.34	0.00	121.34	7.18	0.00	300.62
Community Commercial	21.22	0.00	21.22	1.26	0.00	52.58
Transit-Oriented Development - Low	67.91	0.00	67.91	4.02	0.00	168.25
Transit-Oriented Development - Moderate	48.69	0.00	48.69	2.88	0.00	120.62
Neo-Industrial	21.97	0.00	21.97	1.30	0.00	54.43
Industrial	36.20	0.00	36.20	2.14	0.00	89.69
Downtown	86.14	0.00	86.14	5.09	0.00	213.41
Waterfront	1.50	0.00	1.50	0.09	0.00	3.71
Regional Serving Facility	1.50	0.00	1.50	0.09	0.00	3.71
2018 Total	15,962.19	0.00	15,962.19	944.09	0.00	39,547.44

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	1,353.78	0.00	1,353.78	80.01	0.00	3,354.01
Multi-Family – Low	209.00	0.00	209.00	12.35	0.00	517.81
Multi-Family – Moderate	364.57	0.00	364.57	21.55	0.00	903.22
Neighborhood Serving Centers and Corridors – Low	138.69	0.00	138.69	8.20	0.00	343.61
Neighborhood Serving Centers and Corridors – Moderate	281.74	0.00	281.74	16.65	0.00	698.02
Community Commercial	88.30	0.00	88.30	5.22	0.00	218.77
Transit-Oriented Development - Low	76.85	0.00	76.85	4.54	0.00	190.39
Transit-Oriented Development - Moderate	54.78	0.00	54.78	3.24	0.00	135.72
Neo-Industrial	40.34	0.00	40.34	2.38	0.00	99.94
Industrial	25.30	0.00	25.30	1.50	0.00	62.69
Downtown	355.54	0.00	355.54	21.01	0.00	880.86
Waterfront	88.30	0.00	88.30	5.22	0.00	218.77
Regional Serving Facility	30.94	0.00	30.94	1.83	0.00	76.65
2018 Total	3,108.14	0.00	3,108.14	183.70	0.00	7,700.45

Waste Sources
GHG Emissions, MT/Year

Apartments Mid Rise	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	1,353.80	0.00	1,353.80	80.01	0.00	3,353.96
Multi-Family – Low	209.01	0.00	209.01	12.35	0.00	517.80
Multi-Family – Moderate	364.57	0.00	364.57	21.55	0.00	903.21
Neighborhood Serving Centers and Corridors – Low	138.69	0.00	138.69	8.20	0.00	343.61
Neighborhood Serving Centers and Corridors – Moderate	281.75	0.00	281.75	16.65	0.00	698.01
Community Commercial	88.30	0.00	88.30	5.22	0.00	218.77
Transit-Oriented Development - Low	76.85	0.00	76.85	4.54	0.00	190.39
Transit-Oriented Development - Moderate	54.78	0.00	54.78	3.24	0.00	135.72
Neo-Industrial	40.34	0.00	40.34	2.38	0.00	99.94
Industrial	25.30	0.00	25.30	1.50	0.00	62.69
Downtown	355.55	0.00	355.55	21.01	0.00	880.84
Waterfront	88.30	0.00	88.30	5.22	0.00	218.77
Regional Serving Facility	30.94	0.00	30.94	1.83	0.00	76.65
2018 Total	3,108.19	0.00	3,108.19	183.69	0.00	7,700.34

Waste Sources
GHG Emissions, MT/Year

Condos/Townhouse	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	570.01	0.00	570.01	33.69	0.00	1,412.21
Multi-Family – Low	88.00	0.00	88.00	5.20	0.00	218.03
Multi-Family – Moderate	153.50	0.00	153.50	9.07	0.00	380.30
Neighborhood Serving Centers and Corridors – Low	58.40	0.00	58.40	3.45	0.00	144.68
Neighborhood Serving Centers and Corridors – Moderate	118.63	0.00	118.63	7.01	0.00	293.90
Community Commercial	37.18	0.00	37.18	2.20	0.00	92.11
Transit-Oriented Development - Low	32.36	0.00	32.36	1.91	0.00	80.16
Transit-Oriented Development - Moderate	23.07	0.00	23.07	1.36	0.00	57.14
Neo-Industrial	16.98	0.00	16.98	1.00	0.00	42.08
Industrial	10.65	0.00	10.65	0.63	0.00	26.40
Downtown	149.70	0.00	149.70	8.85	0.00	370.89
Waterfront	37.18	0.00	37.18	2.20	0.00	92.11
Regional Serving Facility	13.03	0.00	13.03	0.77	0.00	32.27
2018 Total	1,308.69	0.00	1,308.69	77.35	0.00	3,242.30

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
City Park						
Open Space	0.33	0.00	0.33	0.02	0.00	0.82
Founding and Contemporary Neighborhood	0.92	0.00	0.92	0.05	0.00	2.28
Multi-Family – Low	0.01	0.00	0.01	0.00	0.00	0.02
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.00	0.02	0.00	0.00	0.04
Neighborhood Serving Centers and Corridors – Moderate	0.01	0.00	0.01	0.00	0.00	0.02
Community Commercial	0.01	0.00	0.01	0.00	0.00	0.04
Transit-Oriented Development - Low	0.02	0.00	0.02	0.00	0.00	0.05
Transit-Oriented Development - Moderate	0.02	0.00	0.02	0.00	0.00	0.04
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.02	0.00	0.02	0.00	0.00	0.05
Downtown	0.06	0.00	0.06	0.00	0.00	0.16
Waterfront	0.05	0.00	0.05	0.00	0.00	0.13
Regional Serving Facility	0.78	0.00	0.78	0.04	0.00	1.93
2018 Total	2.26	0.00	2.26	0.12	0.00	5.58

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Golf Course						
Open Space	3.40	0.00	3.40	0.20	0.00	8.42
Founding and Contemporary Neighborhood	9.51	0.00	9.51	0.56	0.00	23.57
Multi-Family – Low	0.07	0.00	0.07	0.00	0.00	0.17
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.16	0.00	0.16	0.01	0.00	0.39
Neighborhood Serving Centers and Corridors – Moderate	0.09	0.00	0.09	0.01	0.00	0.23
Community Commercial	0.15	0.00	0.15	0.01	0.00	0.38
Transit-Oriented Development - Low	0.22	0.00	0.22	0.01	0.00	0.54
Transit-Oriented Development - Moderate	0.18	0.00	0.18	0.01	0.00	0.44
Neo-Industrial	0.02	0.00	0.02	0.00	0.00	0.05
Industrial	0.21	0.00	0.21	0.01	0.00	0.53
Downtown	0.65	0.00	0.65	0.04	0.00	1.61
Waterfront	0.54	0.00	0.54	0.03	0.00	1.35
Regional Serving Facility	8.06	0.00	8.06	0.48	0.00	19.96
2018 Total	23.27	0.00	23.27	1.38	0.00	57.64

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Library						
Open Space	146.67	0.00	146.67	8.67	0.00	363.36
Founding and Contemporary Neighborhood	410.41	0.00	410.41	24.25	0.00	1,016.78
Multi-Family – Low	2.97	0.00	2.97	0.18	0.00	7.35
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	6.84	0.00	6.84	0.40	0.00	16.95
Neighborhood Serving Centers and Corridors – Moderate	4.07	0.00	4.07	0.24	0.00	10.07
Community Commercial	6.67	0.00	6.67	0.39	0.00	16.54
Transit-Oriented Development - Low	9.35	0.00	9.35	0.55	0.00	23.16
Transit-Oriented Development - Moderate	7.62	0.00	7.62	0.45	0.00	18.89
Neo-Industrial	0.89	0.00	0.89	0.05	0.00	2.21
Industrial	9.18	0.00	9.18	0.54	0.00	22.75
Downtown	28.08	0.00	28.08	1.66	0.00	69.57
Waterfront	23.45	0.00	23.45	1.39	0.00	58.10
Regional Serving Facility	347.49	0.00	347.49	20.54	0.00	860.89
2018 Total	1,003.70	0.00	1,003.70	59.32	0.00	2,486.62

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Junior College						
Open Space	207.02	0.00	207.02	12.24	0.00	512.89
Founding and Contemporary Neighborhood	579.30	0.00	579.30	34.24	0.00	1,435.19
Multi-Family – Low	4.19	0.00	4.19	0.25	0.00	10.38
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	9.66	0.00	9.66	0.57	0.00	23.93
Neighborhood Serving Centers and Corridors – Moderate	5.74	0.00	5.74	0.34	0.00	14.22
Community Commercial	9.42	0.00	9.42	0.56	0.00	23.34
Transit-Oriented Development - Low	13.19	0.00	13.19	0.78	0.00	32.69
Transit-Oriented Development - Moderate	10.76	0.00	10.76	0.64	0.00	26.66
Neo-Industrial	1.26	0.00	1.26	0.07	0.00	3.12
Industrial	12.96	0.00	12.96	0.77	0.00	32.12
Downtown	39.64	0.00	39.64	2.34	0.00	98.20
Waterfront	33.10	0.00	33.10	1.96	0.00	82.00
Regional Serving Facility	490.49	0.00	490.49	28.99	0.00	1,215.16
2018 Total	1,416.74	0.00	1,416.74	83.73	0.00	3,509.90

Waste Sources
GHG Emissions, MT/Year

General Office Building	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	3.52	0.00	3.52	0.21	0.00	8.72
Founding and Contemporary Neighborhood	67.01	0.00	67.01	3.96	0.00	166.01
Multi-Family – Low	0.20	0.00	0.20	0.01	0.00	0.49
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	15.63	0.00	15.63	0.92	0.00	38.72
Neighborhood Serving Centers and Corridors – Moderate	24.80	0.00	24.80	1.47	0.00	61.43
Community Commercial	32.22	0.00	32.22	1.90	0.00	79.81
Transit-Oriented Development - Low	18.79	0.00	18.79	1.11	0.00	46.56
Transit-Oriented Development - Moderate	4.91	0.00	4.91	0.29	0.00	12.16
Neo-Industrial	1.34	0.00	1.34	0.08	0.00	3.32
Industrial	34.80	0.00	34.80	2.06	0.00	86.22
Downtown	368.05	0.00	368.05	21.75	0.00	911.83
Waterfront	72.89	0.00	72.89	4.31	0.00	180.57
Regional Serving Facility	109.49	0.00	109.49	6.47	0.00	271.26
2018 Total	753.64	0.00	753.64	44.54	0.00	1,867.11

Waste Sources
GHG Emissions, MT/Year

Medical Office Building	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	40.89	0.00	40.89	2.42	0.00	101.29
Founding and Contemporary Neighborhood	778.16	0.00	778.16	45.99	0.00	1,927.86
Multi-Family – Low	2.30	0.00	2.30	0.14	0.00	5.70
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	181.52	0.00	181.52	10.73	0.00	449.72
Neighborhood Serving Centers and Corridors – Moderate	287.96	0.00	287.96	17.02	0.00	713.41
Community Commercial	374.12	0.00	374.12	22.11	0.00	926.86
Transit-Oriented Development - Low	218.24	0.00	218.24	12.90	0.00	540.69
Transit-Oriented Development - Moderate	57.00	0.00	57.00	3.37	0.00	141.22
Neo-Industrial	15.57	0.00	15.57	0.92	0.00	38.56
Industrial	404.15	0.00	404.15	23.88	0.00	1,001.27
Downtown	4,274.24	0.00	4,274.24	252.60	0.00	10,589.25
Waterfront	846.45	0.00	846.45	50.02	0.00	2,097.05
Regional Serving Facility	1,271.54	0.00	1,271.54	75.15	0.00	3,150.19
2018 Total	8,752.15	0.00	8,752.15	517.24	0.00	21,683.07

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Convenience Market						
Open Space	103.54	0.00	103.54	6.12	0.00	256.52
Founding and Contemporary Neighborhood	732.53	0.00	732.53	43.29	0.00	1,814.80
Multi-Family – Low	6.53	0.00	6.53	0.39	0.00	16.17
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	288.29	0.00	288.29	17.04	0.00	714.23
Neighborhood Serving Centers and Corridors – Moderate	323.55	0.00	323.55	19.12	0.00	801.59
Community Commercial	651.90	0.00	651.90	38.53	0.00	1,615.04
Transit-Oriented Development - Low	152.21	0.00	152.21	9.00	0.00	377.08
Transit-Oriented Development - Moderate	120.07	0.00	120.07	7.10	0.00	297.47
Neo-Industrial	58.55	0.00	58.55	3.46	0.00	145.05
Industrial	48.77	0.00	48.77	2.88	0.00	120.83
Downtown	298.04	0.00	298.04	17.61	0.00	738.37
Waterfront	318.28	0.00	318.28	18.81	0.00	788.51
Regional Serving Facility	102.87	0.00	102.87	6.08	0.00	254.85
2018 Total	3,205.12	0.00	3,205.12	189.42	0.00	7,940.53

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Pharmacy/Drug Store						
Open Space	103.60	0.00	103.60	6.12	0.00	256.65
Founding and Contemporary Neighborhood	732.92	0.00	732.92	43.31	0.00	1,815.77
Multi-Family – Low	6.53	0.00	6.53	0.39	0.00	16.18
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	288.45	0.00	288.45	17.05	0.00	714.61
Neighborhood Serving Centers and Corridors – Moderate	323.73	0.00	323.73	19.13	0.00	802.02
Community Commercial	652.24	0.00	652.24	38.55	0.00	1,615.90
Transit-Oriented Development - Low	152.29	0.00	152.29	9.00	0.00	377.29
Transit-Oriented Development - Moderate	120.14	0.00	120.14	7.10	0.00	297.63
Neo-Industrial	58.58	0.00	58.58	3.46	0.00	145.13
Industrial	48.80	0.00	48.80	2.88	0.00	120.90
Downtown	298.20	0.00	298.20	17.62	0.00	738.77
Waterfront	318.45	0.00	318.45	18.82	0.00	788.94
Regional Serving Facility	102.92	0.00	102.92	6.08	0.00	254.99
2018 Total	3,206.83	0.00	3,206.83	189.52	0.00	7,944.77

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Regional Shopping Center						
Open Space	36.18	0.00	36.18	2.14	0.00	89.63
Founding and Contemporary Neighborhood	255.94	0.00	255.94	15.13	0.00	634.09
Multi-Family – Low	2.28	0.00	2.28	0.13	0.00	5.65
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	100.73	0.00	100.73	5.95	0.00	249.55
Neighborhood Serving Centers and Corridors – Moderate	113.05	0.00	113.05	6.68	0.00	280.07
Community Commercial	227.77	0.00	227.77	13.46	0.00	564.29
Transit-Oriented Development - Low	53.18	0.00	53.18	3.14	0.00	131.75
Transit-Oriented Development - Moderate	41.95	0.00	41.95	2.48	0.00	103.94
Neo-Industrial	20.46	0.00	20.46	1.21	0.00	50.68
Industrial	17.04	0.00	17.04	1.01	0.00	42.22
Downtown	104.13	0.00	104.13	6.15	0.00	257.99
Waterfront	111.21	0.00	111.21	6.57	0.00	275.51
Regional Serving Facility	35.94	0.00	35.94	2.12	0.00	89.05
2018 Total	1,119.87	0.00	1,119.87	66.18	0.00	2,774.42

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Strip Mall						
Open Space	36.18	0.00	36.18	2.14	0.00	89.63
Founding and Contemporary Neighborhood	255.94	0.00	255.94	15.13	0.00	634.09
Multi-Family – Low	2.28	0.00	2.28	0.13	0.00	5.65
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	100.73	0.00	100.73	5.95	0.00	249.55
Neighborhood Serving Centers and Corridors – Moderate	113.05	0.00	113.05	6.68	0.00	280.07
Community Commercial	227.77	0.00	227.77	13.46	0.00	564.29
Transit-Oriented Development - Low	53.18	0.00	53.18	3.14	0.00	131.75
Transit-Oriented Development - Moderate	41.95	0.00	41.95	2.48	0.00	103.94
Neo-Industrial	20.46	0.00	20.46	1.21	0.00	50.68
Industrial	17.04	0.00	17.04	1.01	0.00	42.22
Downtown	104.13	0.00	104.13	6.15	0.00	257.99
Waterfront	111.21	0.00	111.21	6.57	0.00	275.51
Regional Serving Facility	35.94	0.00	35.94	2.12	0.00	89.05
2018 Total	1,119.87	0.00	1,119.87	66.18	0.00	2,774.42

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Light Industrial						
Open Space	92.37	0.00	92.37	5.46	0.00	228.84
Founding and Contemporary Neighborhood	54.86	0.00	54.86	3.24	0.00	135.91
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	8.37	0.00	8.37	0.49	0.00	20.74
Neighborhood Serving Centers and Corridors – Moderate	14.23	0.00	14.23	0.84	0.00	35.25
Community Commercial	89.12	0.00	89.12	5.27	0.00	220.80
Transit-Oriented Development - Low	0.63	0.00	0.63	0.04	0.00	1.56
Transit-Oriented Development - Moderate	0.50	0.00	0.50	0.03	0.00	1.25
Neo-Industrial	110.06	0.00	110.06	6.50	0.00	272.68
Industrial	341.19	0.00	341.19	20.16	0.00	845.28
Downtown	4.14	0.00	4.14	0.24	0.00	10.27
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	758.65	0.00	758.65	44.83	0.00	1,879.54
2018 Total	1,474.13	0.00	1,474.13	87.12	0.00	3,652.11

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Manufacturing						
Open Space	92.37	0.00	92.37	5.46	0.00	228.84
Founding and Contemporary Neighborhood	54.86	0.00	54.86	3.24	0.00	135.91
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	8.37	0.00	8.37	0.49	0.00	20.74
Neighborhood Serving Centers and Corridors – Moderate	14.23	0.00	14.23	0.84	0.00	35.25
Community Commercial	89.12	0.00	89.12	5.27	0.00	220.80
Transit-Oriented Development - Low	0.63	0.00	0.63	0.04	0.00	1.56
Transit-Oriented Development - Moderate	0.50	0.00	0.50	0.03	0.00	1.25
Neo-Industrial	110.06	0.00	110.06	6.50	0.00	272.68
Industrial	341.19	0.00	341.19	20.16	0.00	845.28
Downtown	4.14	0.00	4.14	0.24	0.00	10.27
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	758.65	0.00	758.65	44.83	0.00	1,879.54
2018 Total	1,474.13	0.00	1,474.13	87.12	0.00	3,652.11

Waste Sources

GHG Emissions, MT/Year

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Research & Development						
Open Space	5.66	0.00	5.66	0.33	0.00	14.02
Founding and Contemporary Neighborhood	3.36	0.00	3.36	0.20	0.00	8.33
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.51	0.00	0.51	0.03	0.00	1.27
Neighborhood Serving Centers and Corridors – Moderate	0.87	0.00	0.87	0.05	0.00	2.16
Community Commercial	5.46	0.00	5.46	0.32	0.00	13.53
Transit-Oriented Development - Low	0.04	0.00	0.04	0.00	0.00	0.10
Transit-Oriented Development - Moderate	0.03	0.00	0.03	0.00	0.00	0.08
Neo-Industrial	6.75	0.00	6.75	0.40	0.00	16.71
Industrial	20.91	0.00	20.91	1.24	0.00	51.80
Downtown	0.25	0.00	0.25	0.02	0.00	0.63
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	46.49	0.00	46.49	2.75	0.00	115.19
2018 Total	90.34	0.00	90.34	5.34	0.00	223.82

2018 GHG Emissions	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	1,250.83	25,159.83	26,410.66	20.17	20.17	30,619.09
Multi-Family – Low	12.63	253.99	266.62	0.20	0.20	309.10
Multi-Family – Moderate	8.49	170.85	179.35	0.14	0.14	207.92
Neighborhood Serving Centers and Corridors – Low	15.71	315.93	331.64	0.25	0.25	384.48
Neighborhood Serving Centers and Corridors – Moderate	10.04	202.03	212.07	0.16	0.16	245.87
Community Commercial	1.76	35.33	37.09	0.03	0.03	43.00
Transit-Oriented Development - Low	5.62	113.07	118.69	0.09	0.09	137.60
Transit-Oriented Development - Moderate	4.03	81.06	85.09	0.07	0.07	98.65
Neo-Industrial	1.82	36.58	38.40	0.03	0.03	44.52
Industrial	3.00	60.28	63.27	0.05	0.05	73.36
Downtown	7.13	143.42	150.55	0.12	0.12	174.54
Waterfront	0.12	2.49	2.62	0.00	0.00	3.04
Regional Serving Facility	0.12	2.49	2.62	0.00	0.00	3.04
2018 Total	1,321.30	26,577.36	27,898.67	21.31	21.31	32,344.21

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	299.66	6,027.14	6,326.80	30.99	0.91	7,334.43
Multi-Family – Low	46.26	930.50	976.77	4.78	0.14	1,132.33
Multi-Family – Moderate	80.70	1,623.08	1,703.78	8.35	0.24	1,975.13
Neighborhood Serving Centers and Corridors – Low	30.70	617.47	648.17	3.17	0.09	751.40
Neighborhood Serving Centers and Corridors – Moderate	62.36	1,254.34	1,316.71	6.45	0.19	1,526.41
Community Commercial	19.55	393.13	412.67	2.02	0.06	478.40
Transit-Oriented Development - Low	17.01	342.13	359.14	1.76	0.05	416.34
Transit-Oriented Development - Moderate	12.13	243.88	256.01	1.25	0.04	296.78
Neo-Industrial	8.93	179.59	188.52	0.92	0.03	218.54
Industrial	5.60	112.66	118.26	0.58	0.02	137.09
Downtown	78.70	1,582.89	1,661.59	8.14	0.24	1,926.23
Waterfront	19.55	393.13	412.67	2.02	0.06	478.40
Regional Serving Facility	6.85	137.74	144.59	0.71	0.02	167.62
2018 Total	687.99	13,837.68	14,525.68	71.15	2.08	16,839.10

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Mid Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	408.55	1,348.88	1,757.43	0.38	0.38	1,815.12
Multi-Family – Low	63.07	208.25	271.32	0.06	0.06	280.23
Multi-Family – Moderate	110.02	363.25	473.27	0.10	0.10	488.80
Neighborhood Serving Centers and Corridors – Low	41.86	138.19	180.05	0.04	0.04	185.96
Neighborhood Serving Centers and Corridors – Moderate	85.03	280.72	365.75	0.08	0.08	377.75
Community Commercial	26.65	87.98	114.63	0.02	0.02	118.39
Transit-Oriented Development - Low	23.19	76.57	99.76	0.02	0.02	103.04
Transit-Oriented Development - Moderate	16.53	54.58	71.11	0.02	0.02	73.45
Neo-Industrial	12.17	40.19	52.37	0.01	0.01	54.08
Industrial	7.64	25.21	32.85	0.01	0.01	33.93
Downtown	107.30	354.25	461.55	0.10	0.10	476.70
Waterfront	26.65	87.98	114.63	0.02	0.02	118.39
Regional Serving Facility	9.34	30.83	40.16	0.01	0.01	41.48
2018 Total	937.98	3,096.89	4,034.87	0.88	0.88	4,167.32

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Condos/Townhouse						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	126.17	2,537.74	2,663.92	13.05	0.38	3,088.18
Multi-Family – Low	19.48	391.79	411.27	2.01	0.06	476.77
Multi-Family – Moderate	33.98	683.40	717.38	3.51	0.10	831.63
Neighborhood Serving Centers and Corridors – Low	12.93	259.99	272.91	1.34	0.04	316.38
Neighborhood Serving Centers and Corridors – Moderate	26.26	528.14	554.40	2.72	0.08	642.70
Community Commercial	8.23	165.53	173.76	0.85	0.02	201.43
Transit-Oriented Development - Low	7.16	144.06	151.22	0.74	0.02	175.30
Transit-Oriented Development - Moderate	5.11	102.69	107.79	0.53	0.02	124.96
Neo-Industrial	3.76	75.62	79.38	0.39	0.01	92.02
Industrial	2.36	47.43	49.79	0.24	0.01	57.72
Downtown	33.14	666.48	699.62	3.43	0.10	811.04
Waterfront	8.23	165.53	173.76	0.85	0.02	201.43
Regional Serving Facility	2.88	58.00	60.88	0.30	0.01	70.57
2018 Total	289.68	5,826.39	6,116.07	29.96	0.88	7,090.15

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
City Park						
Open Space	0.00	75.96	75.96	0.02	0.02	76.23
Founding and Contemporary Neighborhood	0.00	212.55	212.55	0.05	0.05	213.31
Multi-Family – Low	0.00	1.54	1.54	0.00	0.00	1.54
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	3.54	3.54	0.00	0.00	3.56
Neighborhood Serving Centers and Corridors – Moderate	0.00	2.11	2.11	0.00	0.00	2.11
Community Commercial	0.00	3.46	3.46	0.00	0.00	3.47
Transit-Oriented Development - Low	0.00	4.84	4.84	0.00	0.00	4.86
Transit-Oriented Development - Moderate	0.00	3.95	3.95	0.00	0.00	3.96
Neo-Industrial	0.00	0.46	0.46	0.00	0.00	0.46
Industrial	0.00	4.76	4.76	0.00	0.00	4.77
Downtown	0.00	14.54	14.54	0.00	0.00	14.60
Waterfront	0.00	12.14	12.14	0.00	0.00	12.19
Regional Serving Facility	0.00	179.96	179.96	0.04	0.04	180.61
2018 Total	0.00	519.81	519.81	0.12	0.12	521.67

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Golf Course						
Open Space	0.00	75.96	75.96	0.02	0.02	76.23
Founding and Contemporary Neighborhood	0.00	212.55	212.55	0.05	0.05	213.31
Multi-Family – Low	0.00	1.54	1.54	0.00	0.00	1.54
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	3.54	3.54	0.00	0.00	3.56
Neighborhood Serving Centers and Corridors – Moderate	0.00	2.11	2.11	0.00	0.00	2.11
Community Commercial	0.00	3.46	3.46	0.00	0.00	3.47
Transit-Oriented Development - Low	0.00	4.84	4.84	0.00	0.00	4.86
Transit-Oriented Development - Moderate	0.00	3.95	3.95	0.00	0.00	3.96
Neo-Industrial	0.00	0.46	0.46	0.00	0.00	0.46
Industrial	0.00	4.76	4.76	0.00	0.00	4.77
Downtown	0.00	14.54	14.54	0.00	0.00	14.60
Waterfront	0.00	12.14	12.14	0.00	0.00	12.19
Regional Serving Facility	0.00	179.96	179.96	0.04	0.04	180.61
2018 Total	0.00	519.81	519.81	0.12	0.12	521.67

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Library						
Open Space	7.79	237.73	245.52	0.81	0.02	271.99
Founding and Contemporary Neighborhood	21.79	665.24	687.04	2.27	0.05	761.11
Multi-Family – Low	0.16	4.81	4.97	0.02	0.00	5.50
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.36	11.09	11.45	0.04	0.00	12.69
Neighborhood Serving Centers and Corridors – Moderate	0.22	6.59	6.81	0.02	0.00	7.54
Community Commercial	0.35	10.82	11.17	0.04	0.00	12.38
Transit-Oriented Development - Low	0.50	15.15	15.65	0.05	0.00	17.34
Transit-Oriented Development - Moderate	0.40	12.36	12.76	0.04	0.00	14.14
Neo-Industrial	0.05	1.45	1.49	0.00	0.00	1.66
Industrial	0.49	14.89	15.37	0.05	0.00	17.03
Downtown	1.49	45.52	47.01	0.16	0.00	52.08
Waterfront	1.25	38.01	39.25	0.13	0.00	43.49
Regional Serving Facility	18.45	563.25	581.70	1.92	0.04	644.43
2018 Total	53.29	1,626.92	1,680.21	5.55	0.12	1,861.38

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Junior College						
Open Space	12.21	372.68	384.88	1.27	0.02	426.38
Founding and Contemporary Neighborhood	34.16	1,042.85	1,077.01	3.55	0.05	1,193.14
Multi-Family – Low	0.25	7.54	7.79	0.03	0.00	8.63
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.57	17.39	17.96	0.06	0.00	19.89
Neighborhood Serving Centers and Corridors – Moderate	0.34	10.33	10.67	0.04	0.00	11.82
Community Commercial	0.56	16.96	17.52	0.06	0.00	19.40
Transit-Oriented Development - Low	0.78	23.75	24.53	0.08	0.00	27.18
Transit-Oriented Development - Moderate	0.63	19.37	20.01	0.07	0.00	22.16
Neo-Industrial	0.07	2.27	2.34	0.01	0.00	2.60
Industrial	0.76	23.34	24.10	0.08	0.00	26.70
Downtown	2.34	71.35	73.69	0.24	0.00	81.64
Waterfront	1.95	59.58	61.54	0.20	0.00	68.17
Regional Serving Facility	28.92	882.97	911.89	3.01	0.04	1,010.22
2018 Total	83.53	2,550.38	2,633.93	8.69	0.12	2,917.93

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Office Building						
Open Space	1.05	20.94	22.00	0.11	0.00	25.53
Founding and Contemporary Neighborhood	20.01	398.60	418.62	2.07	0.01	485.90
Multi-Family – Low	0.06	1.18	1.24	0.01	0.00	1.44
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	4.67	92.98	97.65	0.48	0.00	113.35
Neighborhood Serving Centers and Corridors – Moderate	7.41	147.50	154.91	0.77	0.00	179.81
Community Commercial	9.62	191.64	201.26	1.00	0.00	233.61
Transit-Oriented Development - Low	5.61	111.79	117.41	0.58	0.00	136.28
Transit-Oriented Development - Moderate	1.47	29.20	30.66	0.15	0.00	35.59
Neo-Industrial	0.40	7.97	8.37	0.04	0.00	9.72
Industrial	10.39	207.02	217.42	1.08	0.00	252.36
Downtown	109.93	2,189.44	2,299.37	11.38	0.04	2,668.93
Waterfront	21.77	433.59	455.36	2.25	0.01	528.54
Regional Serving Facility	32.70	651.33	684.04	3.39	0.01	793.98
2018 Total	225.11	4,483.20	4,708.30	23.31	0.09	5,465.04

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Medical Office Building						
Open Space	0.74	11.29	12.03	0.08	0.00	14.51
Founding and Contemporary Neighborhood	14.13	214.81	228.95	1.46	0.01	276.21
Multi-Family – Low	0.04	0.64	0.68	0.00	0.00	0.82
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	3.30	50.11	53.41	0.34	0.00	64.43
Neighborhood Serving Centers and Corridors – Moderate	5.23	79.49	84.72	0.54	0.00	102.21
Community Commercial	6.79	103.28	110.07	0.70	0.00	132.79
Transit-Oriented Development - Low	3.96	60.25	64.21	0.41	0.00	77.47
Transit-Oriented Development - Moderate	1.04	15.74	16.77	0.11	0.00	20.23
Neo-Industrial	0.28	4.30	4.58	0.03	0.00	5.52
Industrial	7.34	111.57	118.91	0.76	0.00	143.45
Downtown	77.61	1,179.92	1,257.54	8.02	0.04	1,517.14
Waterfront	15.37	233.67	249.04	1.59	0.01	300.45
Regional Serving Facility	23.09	351.01	374.10	2.39	0.01	451.33
2018 Total	158.93	2,416.07	2,575.00	16.42	0.09	3,106.57

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Convenience Market						
Open Space	3.99	79.43	83.42	0.41	0.00	96.83
Founding and Contemporary Neighborhood	28.22	561.99	590.20	2.92	0.03	685.06
Multi-Family – Low	0.25	5.01	5.26	0.03	0.00	6.10
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.11	221.17	232.28	1.15	0.01	269.61
Neighborhood Serving Centers and Corridors – Moderate	12.46	248.23	260.69	1.29	0.01	302.59
Community Commercial	25.11	500.12	525.24	2.60	0.02	609.65
Transit-Oriented Development - Low	5.86	116.77	122.63	0.61	0.01	142.34
Transit-Oriented Development - Moderate	4.63	92.12	96.74	0.48	0.00	112.29
Neo-Industrial	2.26	44.92	47.17	0.23	0.00	54.76
Industrial	1.88	37.42	39.30	0.19	0.00	45.61
Downtown	11.48	228.65	240.13	1.19	0.01	278.73
Waterfront	12.26	244.18	256.44	1.27	0.01	297.65
Regional Serving Facility	3.96	78.92	82.88	0.41	0.00	96.20
2018 Total	123.47	2,458.92	2,582.38	12.78	0.12	2,997.44

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Pharmacy/Drug Store						
Open Space	3.79	75.55	79.34	0.39	0.00	92.09
Founding and Contemporary Neighborhood	26.84	534.48	561.32	2.78	0.03	651.54
Multi-Family – Low	0.24	4.76	5.00	0.02	0.00	5.81
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	10.56	210.35	220.91	1.09	0.01	256.42
Neighborhood Serving Centers and Corridors – Moderate	11.85	236.08	247.93	1.23	0.01	287.78
Community Commercial	23.88	475.65	499.53	2.47	0.02	579.82
Transit-Oriented Development - Low	5.58	111.06	116.63	0.58	0.01	135.38
Transit-Oriented Development - Moderate	4.40	87.61	92.01	0.46	0.00	106.80
Neo-Industrial	2.15	42.72	44.86	0.22	0.00	52.08
Industrial	1.79	35.59	37.37	0.19	0.00	43.38
Downtown	10.92	217.46	228.38	1.13	0.01	265.09
Waterfront	11.66	232.23	243.89	1.21	0.01	283.09
Regional Serving Facility	3.77	75.06	78.83	0.39	0.00	91.50
2018 Total	117.43	2,338.59	2,456.01	12.16	0.12	2,850.75

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Regional Shopping Center						
Open Space	3.99	79.43	83.42	0.41	0.00	96.83
Founding and Contemporary Neighborhood	28.22	561.99	590.20	2.92	0.03	685.06
Multi-Family – Low	0.25	5.01	5.26	0.03	0.00	6.10
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.11	221.17	232.28	1.15	0.01	269.61
Neighborhood Serving Centers and Corridors – Moderate	12.46	248.23	260.69	1.29	0.01	302.59
Community Commercial	25.11	500.12	525.24	2.60	0.02	609.65
Transit-Oriented Development - Low	5.86	116.77	122.63	0.61	0.01	142.34
Transit-Oriented Development - Moderate	4.63	92.12	96.74	0.48	0.00	112.29
Neo-Industrial	2.26	44.92	47.17	0.23	0.00	54.76
Industrial	1.88	37.42	39.30	0.19	0.00	45.61
Downtown	11.48	228.65	240.13	1.19	0.01	278.73
Waterfront	12.26	244.18	256.44	1.27	0.01	297.65
Regional Serving Facility	3.96	78.92	82.88	0.41	0.00	96.20
2018 Total	123.47	2,458.92	2,582.38	12.78	0.12	2,997.44

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Strip Mall						
Open Space	3.99	79.43	83.42	0.41	0.00	96.83
Founding and Contemporary Neighborhood	28.22	561.99	590.20	2.92	0.03	685.06
Multi-Family – Low	0.25	5.01	5.26	0.03	0.00	6.10
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.11	221.17	232.28	1.15	0.01	269.61
Neighborhood Serving Centers and Corridors – Moderate	12.46	248.23	260.69	1.29	0.01	302.59
Community Commercial	25.11	500.12	525.24	2.60	0.02	609.65
Transit-Oriented Development - Low	5.86	116.77	122.63	0.61	0.01	142.34
Transit-Oriented Development - Moderate	4.63	92.12	96.74	0.48	0.00	112.29
Neo-Industrial	2.26	44.92	47.17	0.23	0.00	54.76
Industrial	1.88	37.42	39.30	0.19	0.00	45.61
Downtown	11.48	228.65	240.13	1.19	0.01	278.73
Waterfront	12.26	244.18	256.44	1.27	0.01	297.65
Regional Serving Facility	3.96	78.92	82.88	0.41	0.00	96.20
2018 Total	123.47	2,458.92	2,582.38	12.78	0.12	2,997.44

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Light Industrial						
Open Space	26.93	352.10	379.03	2.78	0.01	468.88
Founding and Contemporary Neighborhood	15.99	209.12	225.11	1.65	0.01	278.47
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	2.44	31.92	34.36	0.25	0.00	42.50
Neighborhood Serving Centers and Corridors – Moderate	4.15	54.24	58.39	0.43	0.00	72.23
Community Commercial	25.98	339.72	365.70	2.68	0.01	452.40
Transit-Oriented Development - Low	0.18	2.40	2.58	0.02	0.00	3.19
Transit-Oriented Development - Moderate	0.15	1.92	2.07	0.02	0.00	2.56
Neo-Industrial	32.08	419.55	451.63	3.31	0.01	558.70
Industrial	99.45	1,300.57	1,400.02	10.27	0.03	1,731.92
Downtown	1.21	15.80	17.01	0.12	0.00	21.04
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	221.14	2,891.90	3,113.04	22.84	0.07	3,851.04
2018 Total	429.70	5,619.22	6,048.93	44.37	0.13	7,482.92

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Manufacturing						
Open Space	26.93	352.10	379.03	2.78	0.01	468.88
Founding and Contemporary Neighborhood	15.99	209.12	225.11	1.65	0.01	278.47
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	2.44	31.92	34.36	0.25	0.00	42.50
Neighborhood Serving Centers and Corridors – Moderate	4.15	54.24	58.39	0.43	0.00	72.23
Community Commercial	25.98	339.72	365.70	2.68	0.01	452.40
Transit-Oriented Development - Low	0.18	2.40	2.58	0.02	0.00	3.19
Transit-Oriented Development - Moderate	0.15	1.92	2.07	0.02	0.00	2.56
Neo-Industrial	32.08	419.55	451.63	3.31	0.01	558.70
Industrial	99.45	1,300.57	1,400.02	10.27	0.03	1,731.92
Downtown	1.21	15.80	17.01	0.12	0.00	21.04
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	221.14	2,891.90	3,113.04	22.84	0.07	3,851.04
2018 Total	429.70	5,619.22	6,048.93	44.37	0.13	7,482.92

Water Sources

GHG Emissions, MT/Year

Research & Development	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	57.25	748.65	805.90	5.91	0.14	996.95
Founding and Contemporary Neighborhood	34.00	444.64	478.64	3.51	0.09	592.11
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	5.19	67.86	73.05	0.54	0.01	90.37
Neighborhood Serving Centers and Corridors – Moderate	8.82	115.32	124.14	0.91	0.02	153.57
Community Commercial	55.24	722.34	777.57	5.70	0.14	961.91
Transit-Oriented Development - Low	0.39	5.10	5.49	0.04	0.00	6.79
Transit-Oriented Development - Moderate	0.31	4.08	4.39	0.03	0.00	5.43
Neo-Industrial	68.22	892.06	960.27	7.04	0.17	1,187.92
Industrial	211.46	2,765.32	2,976.78	21.83	0.54	3,682.48
Downtown	2.57	33.59	36.16	0.27	0.01	44.73
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	470.20	6,148.88	6,619.08	48.55	1.19	8,188.25
2018 Total	913.64	11,947.84	12,861.48	94.34	2.31	15,910.52

2040 GHG Emissions

Area Sources
GHG Emissions, MT/Year

Single Family Residential	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	13,655.30	13,655.30	1.24	0.21	13,754.17
Multi-Family – Low	0.00	135.01	135.01	0.01	0.00	135.99
Multi-Family – Moderate	0.00	90.82	90.82	0.01	0.00	91.47
Neighborhood Serving Centers and Corridors – Low	0.00	167.93	167.93	0.02	0.00	169.15
Neighborhood Serving Centers and Corridors – Moderate	0.00	107.39	107.39	0.01	0.00	108.17
Community Commercial	0.00	18.78	18.78	0.00	0.00	18.92
Transit-Oriented Development - Low	0.00	60.10	60.10	0.01	0.00	60.54
Transit-Oriented Development - Moderate	0.00	43.09	43.09	0.00	0.00	43.40
Neo-Industrial	0.00	19.45	19.45	0.00	0.00	19.59
Industrial	0.00	32.04	32.04	0.00	0.00	32.27
Downtown	0.00	76.23	76.23	0.01	0.00	76.79
Waterfront	0.00	1.33	1.33	0.00	0.00	1.34
Regional Serving Facility	0.00	1.33	1.33	0.00	0.00	1.34
2040 Total	0.00	14,408.79	14,408.79	1.30	0.22	14,513.13

Area Sources
GHG Emissions, MT/Year

Apartments Low Rise	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	3,271.50	3,271.50	0.30	0.06	3,295.37
Multi-Family – Low	0.00	579.14	579.14	0.05	0.01	583.37
Multi-Family – Moderate	0.00	1,031.75	1,031.75	0.09	0.02	1,039.28
Neighborhood Serving Centers and Corridors – Low	0.00	412.76	412.76	0.04	0.01	415.77
Neighborhood Serving Centers and Corridors – Moderate	0.00	835.75	835.75	0.08	0.01	841.85
Community Commercial	0.00	208.96	208.96	0.02	0.00	210.48
Transit-Oriented Development - Low	0.00	568.83	568.83	0.05	0.01	572.98
Transit-Oriented Development - Moderate	0.00	601.02	601.02	0.05	0.01	605.40
Neo-Industrial	0.00	102.82	102.82	0.01	0.00	103.57
Industrial	0.00	59.88	59.88	0.01	0.00	60.32
Downtown	0.00	1,209.03	1,209.03	0.11	0.02	1,217.86
Waterfront	0.00	216.32	216.32	0.02	0.00	217.90
Regional Serving Facility	0.00	264.42	264.42	0.02	0.00	266.35
2040 Total	0.00	9,362.18	9,362.18	0.85	0.16	9,430.50

Area Sources
GHG Emissions, MT/Year

Apartments Mid Rise	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	3,271.51	3,271.51	0.30	0.05	3,295.39
Multi-Family – Low	0.00	579.14	579.14	0.05	0.01	583.37
Multi-Family – Moderate	0.00	1,031.75	1,031.75	0.09	0.02	1,039.28
Neighborhood Serving Centers and Corridors – Low	0.00	412.76	412.76	0.04	0.01	415.77
Neighborhood Serving Centers and Corridors – Moderate	0.00	835.76	835.76	0.08	0.01	841.86
Community Commercial	0.00	208.96	208.96	0.02	0.00	210.48
Transit-Oriented Development - Low	0.00	568.83	568.83	0.05	0.01	572.99
Transit-Oriented Development - Moderate	0.00	601.02	601.02	0.05	0.01	605.41
Neo-Industrial	0.00	102.82	102.82	0.01	0.00	103.57
Industrial	0.00	59.88	59.88	0.01	0.00	60.32
Downtown	0.00	1,209.04	1,209.04	0.11	0.02	1,217.86
Waterfront	0.00	216.32	216.32	0.02	0.00	217.90
Regional Serving Facility	0.00	264.42	264.42	0.02	0.00	266.35
2040 Total	0.00	9,362.21	9,362.21	0.85	0.16	9,430.56

Area Sources
GHG Emissions, MT/Year

Condos/Townhouse	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	1,377.47	1,377.47	0.12	0.02	1,387.52
Multi-Family – Low	0.00	243.85	243.85	0.02	0.00	245.63
Multi-Family – Moderate	0.00	434.42	434.42	0.04	0.01	437.59
Neighborhood Serving Centers and Corridors – Low	0.00	173.79	173.79	0.02	0.00	175.06
Neighborhood Serving Centers and Corridors – Moderate	0.00	351.90	351.90	0.03	0.01	354.46
Community Commercial	0.00	87.98	87.98	0.01	0.00	88.62
Transit-Oriented Development - Low	0.00	239.51	239.51	0.02	0.00	241.26
Transit-Oriented Development - Moderate	0.00	253.06	253.06	0.02	0.00	254.91
Neo-Industrial	0.00	43.29	43.29	0.00	0.00	43.61
Industrial	0.00	25.21	25.21	0.00	0.00	25.40
Downtown	0.00	509.07	509.07	0.05	0.01	512.78
Waterfront	0.00	91.08	91.08	0.01	0.00	91.75
Regional Serving Facility	0.00	111.33	111.33	0.01	0.00	112.15
2040 Total	0.00	3,941.97	3,941.97	0.36	0.07	3,970.74

Area Sources
GHG Emissions, MT/Year

City Park	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources
GHG Emissions, MT/Year

Golf Course	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources
GHG Emissions, MT/Year

Library	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources
GHG Emissions, MT/Year

Junior College	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.02	0.02	0.00	0.00	0.02
Founding and Contemporary Neighborhood	0.00	0.05	0.05	0.00	0.00	0.05
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.04	0.04	0.00	0.00	0.04
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources

GHG Emissions, MT/Year

General Office Building	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.06	0.06	0.00	0.00	0.06
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.02	0.02	0.00	0.00	0.02
2040 Total	0.00	0.12	0.12	0.00	0.00	0.12

Area Sources

GHG Emissions, MT/Year

Medical Office Building	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.06	0.06	0.00	0.00	0.06
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.02	0.02	0.00	0.00	0.02
2040 Total	0.00	0.12	0.12	0.00	0.00	0.12

Area Sources
GHG Emissions, MT/Year

Convenience Market	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.03	0.03	0.00	0.00	0.03
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.01	0.01	0.00	0.00	0.01
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources
GHG Emissions, MT/Year

Pharmacy/Drug Store	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.03	0.03	0.00	0.00	0.03
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.01	0.01	0.00	0.00	0.01
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources

GHG Emissions, MT/Year

Regional Shopping Center	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.03	0.03	0.00	0.00	0.03
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.01	0.01	0.00	0.00	0.01
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources

GHG Emissions, MT/Year

Strip Mall	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.03	0.03	0.00	0.00	0.03
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.01	0.01	0.00	0.00	0.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.01	0.01	0.00	0.00	0.01
Community Commercial	0.00	0.03	0.03	0.00	0.00	0.03
Transit-Oriented Development - Low	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.01	0.01	0.00	0.00	0.01
Waterfront	0.00	0.01	0.01	0.00	0.00	0.01
Regional Serving Facility	0.00	0.01	0.01	0.00	0.00	0.01
2040 Total	0.00	0.13	0.13	0.00	0.00	0.13

Area Sources
GHG Emissions, MT/Year

General Light Industrial	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.01	0.01	0.00	0.00	0.01
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.01	0.01	0.00	0.00	0.01
Industrial	0.00	0.03	0.03	0.00	0.00	0.03
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.13	0.13	0.00	0.00	0.13
2040 Total	0.00	0.20	0.20	0.00	0.00	0.20

Area Sources
GHG Emissions, MT/Year

Manufacturing	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.01	0.01	0.00	0.00	0.01
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.01	0.01	0.00	0.00	0.01
Industrial	0.00	0.03	0.03	0.00	0.00	0.03
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.13	0.13	0.00	0.00	0.13
2040 Total	0.00	0.20	0.20	0.00	0.00	0.20

Area Sources

GHG Emissions, MT/Year

Research & Development	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	0.00	0.01	0.01	0.00	0.00	0.01
Founding and Contemporary Neighborhood	0.00	0.01	0.01	0.00	0.00	0.01
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.01	0.01	0.00	0.00	0.01
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.01	0.01	0.00	0.00	0.01
Industrial	0.00	0.03	0.03	0.00	0.00	0.03
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.13	0.13	0.00	0.00	0.13
2040 Total	0.00	0.20	0.20	0.00	0.00	0.20

2040 GHG Emissions	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	171,417.35	171,417.35	5.15	2.27	172,247.51
Multi-Family – Low	0.00	1,694.81	1,694.81	0.05	0.02	1,703.02
Multi-Family – Moderate	0.00	1,140.05	1,140.05	0.03	0.02	1,145.57
Neighborhood Serving Centers and Corridors – Low	0.00	2,108.11	2,108.11	0.06	0.03	2,118.32
Neighborhood Serving Centers and Corridors – Moderate	0.00	1,348.08	1,348.08	0.04	0.02	1,354.61
Community Commercial	0.00	235.78	235.78	0.01	0.00	236.92
Transit-Oriented Development - Low	0.00	754.48	754.48	0.02	0.01	758.14
Transit-Oriented Development - Moderate	0.00	540.90	540.90	0.02	0.01	543.52
Neo-Industrial	0.00	244.10	244.10	0.01	0.00	245.28
Industrial	0.00	402.21	402.21	0.01	0.01	404.15
Downtown	0.00	956.97	956.97	0.03	0.01	961.61
Waterfront	0.00	16.64	16.64	0.00	0.00	16.72
Regional Serving Facility	0.00	16.64	16.64	0.00	0.00	16.72
2040 Total	0.00	180,876.12	180,876.12	5.43	2.39	181,752.08

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	22,911.68	22,911.68	0.68	0.32	23,024.48
Multi-Family – Low	0.00	4,055.98	4,055.98	0.12	0.06	4,075.95
Multi-Family – Moderate	0.00	7,225.76	7,225.76	0.21	0.10	7,261.34
Neighborhood Serving Centers and Corridors – Low	0.00	2,890.72	2,890.72	0.09	0.04	2,904.95
Neighborhood Serving Centers and Corridors – Moderate	0.00	5,853.14	5,853.14	0.17	0.08	5,881.95
Community Commercial	0.00	1,463.41	1,463.41	0.04	0.02	1,470.62
Transit-Oriented Development - Low	0.00	3,983.76	3,983.76	0.12	0.06	4,003.38
Transit-Oriented Development - Moderate	0.00	4,209.18	4,209.18	0.12	0.06	4,229.91
Neo-Industrial	0.00	720.10	720.10	0.02	0.01	723.65
Industrial	0.00	419.37	419.37	0.01	0.01	421.44
Downtown	0.00	8,467.37	8,467.37	0.25	0.12	8,509.06
Waterfront	0.00	1,515.00	1,515.00	0.04	0.02	1,522.46
Regional Serving Facility	0.00	1,851.83	1,851.83	0.05	0.03	1,860.95
2040 Total	0.00	65,567.31	65,567.31	1.93	0.93	65,890.12

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Mid Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	20,132.55	20,132.55	0.61	0.28	20,229.96
Multi-Family – Low	0.00	3,564.00	3,564.00	0.11	0.05	3,581.24
Multi-Family – Moderate	0.00	6,349.30	6,349.30	0.19	0.09	6,380.02
Neighborhood Serving Centers and Corridors – Low	0.00	2,540.08	2,540.08	0.08	0.03	2,552.37
Neighborhood Serving Centers and Corridors – Moderate	0.00	5,143.17	5,143.17	0.16	0.07	5,168.05
Community Commercial	0.00	1,285.91	1,285.91	0.04	0.02	1,292.13
Transit-Oriented Development - Low	0.00	3,500.54	3,500.54	0.11	0.05	3,517.48
Transit-Oriented Development - Moderate	0.00	3,698.62	3,698.62	0.11	0.05	3,716.51
Neo-Industrial	0.00	632.75	632.75	0.02	0.01	635.82
Industrial	0.00	368.50	368.50	0.01	0.01	370.29
Downtown	0.00	7,440.30	7,440.30	0.23	0.10	7,476.30
Waterfront	0.00	1,331.23	1,331.23	0.04	0.02	1,337.67
Regional Serving Facility	0.00	1,627.21	1,627.21	0.05	0.02	1,635.08
2040 Total	0.00	57,614.17	57,614.17	1.75	0.79	57,892.92

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Condos/Townhouse						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	10,719.46	10,719.46	0.32	0.15	10,771.47
Multi-Family – Low	0.00	1,897.63	1,897.63	0.06	0.03	1,906.84
Multi-Family – Moderate	0.00	3,380.65	3,380.65	0.10	0.05	3,397.05
Neighborhood Serving Centers and Corridors – Low	0.00	1,352.45	1,352.45	0.04	0.02	1,359.01
Neighborhood Serving Centers and Corridors – Moderate	0.00	2,738.45	2,738.45	0.08	0.04	2,751.74
Community Commercial	0.00	684.67	684.67	0.02	0.01	687.99
Transit-Oriented Development - Low	0.00	1,863.84	1,863.84	0.06	0.03	1,872.89
Transit-Oriented Development - Moderate	0.00	1,969.31	1,969.31	0.06	0.03	1,978.86
Neo-Industrial	0.00	336.91	336.91	0.01	0.00	338.54
Industrial	0.00	196.21	196.21	0.01	0.00	197.16
Downtown	0.00	3,961.54	3,961.54	0.12	0.05	3,980.77
Waterfront	0.00	708.81	708.81	0.02	0.01	712.25
Regional Serving Facility	0.00	866.40	866.40	0.03	0.01	870.60
2040 Total	0.00	30,676.33	30,676.33	0.93	0.42	30,825.18

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
City Park						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2040 Total	0.00	0.00	0.00	0.00	0.00	0.00

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Golf Course						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Community Commercial	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Low	0.00	0.00	0.00	0.00	0.00	0.00
Transit-Oriented Development - Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	0.00	0.00	0.00	0.00	0.00	0.00
Downtown	0.00	0.00	0.00	0.00	0.00	0.00
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	0.00	0.00	0.00	0.00	0.00
2040 Total	0.00	0.00	0.00	0.00	0.00	0.00

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Library						
Open Space	0.00	2,228.80	2,228.80	0.02	0.02	2,238.69
Founding and Contemporary Neighborhood	0.00	6,043.14	6,043.14	0.05	0.05	6,069.95
Multi-Family – Low	0.00	64.86	64.86	0.00	0.00	65.15
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	121.53	121.53	0.00	0.00	122.07
Neighborhood Serving Centers and Corridors – Moderate	0.00	102.36	102.36	0.00	0.00	102.81
Community Commercial	0.00	97.61	97.61	0.00	0.00	98.05
Transit-Oriented Development - Low	0.00	234.88	234.88	0.00	0.00	235.92
Transit-Oriented Development - Moderate	0.00	231.06	231.06	0.00	0.00	232.08
Neo-Industrial	0.00	14.93	14.93	0.00	0.00	14.99
Industrial	0.00	134.32	134.32	0.00	0.00	134.92
Downtown	0.00	503.94	503.94	0.00	0.00	506.17
Waterfront	0.00	344.81	344.81	0.00	0.00	346.34
Regional Serving Facility	0.00	5,130.41	5,130.41	0.04	0.04	5,153.18
2040 Total	0.00	15,252.65	15,252.65	0.13	0.13	15,320.32

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Junior College						
Open Space	0.00	2,479.18	2,479.18	0.02	0.02	2,490.88
Founding and Contemporary Neighborhood	0.00	6,721.99	6,721.99	0.05	0.05	6,753.73
Multi-Family – Low	0.00	72.15	72.15	0.00	0.00	72.49
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	135.18	135.18	0.00	0.00	135.82
Neighborhood Serving Centers and Corridors – Moderate	0.00	113.85	113.85	0.00	0.00	114.39
Community Commercial	0.00	108.58	108.58	0.00	0.00	109.09
Transit-Oriented Development - Low	0.00	261.27	261.27	0.00	0.00	262.50
Transit-Oriented Development - Moderate	0.00	257.01	257.01	0.00	0.00	258.23
Neo-Industrial	0.00	16.60	16.60	0.00	0.00	16.68
Industrial	0.00	149.41	149.41	0.00	0.00	150.11
Downtown	0.00	560.55	560.55	0.00	0.00	563.20
Waterfront	0.00	383.55	383.55	0.00	0.00	385.36
Regional Serving Facility	0.00	5,706.74	5,706.74	0.04	0.04	5,733.68
2040 Total	0.00	16,966.06	16,966.06	0.13	0.13	17,046.15

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Office Building						
Open Space	0.00	53.83	53.83	0.00	0.00	54.05
Founding and Contemporary Neighborhood	0.00	946.32	946.32	0.01	0.01	950.20
Multi-Family – Low	0.00	1.28	1.28	0.00	0.00	1.28
Multi-Family – Moderate	0.00	0.75	0.75	0.00	0.00	0.75
Neighborhood Serving Centers and Corridors – Low	0.00	228.04	228.04	0.00	0.00	228.98
Neighborhood Serving Centers and Corridors – Moderate	0.00	357.36	357.36	0.00	0.00	358.83
Community Commercial	0.00	473.25	473.25	0.00	0.00	475.19
Transit-Oriented Development - Low	0.00	249.19	249.19	0.00	0.00	250.21
Transit-Oriented Development - Moderate	0.00	59.17	59.17	0.00	0.00	59.41
Neo-Industrial	0.00	21.21	21.21	0.00	0.00	21.30
Industrial	0.00	501.40	501.40	0.00	0.00	503.45
Downtown	0.00	7,077.10	7,077.10	0.06	0.06	7,106.15
Waterfront	0.00	1,087.88	1,087.88	0.01	0.01	1,092.35
Regional Serving Facility	0.00	2,849.74	2,849.74	0.02	0.02	2,861.44
2040 Total	0.00	13,906.51	13,906.51	0.12	0.12	13,963.61

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Medical Office Building						
Open Space	0.00	53.83	53.83	0.00	0.00	54.05
Founding and Contemporary Neighborhood	0.00	946.32	946.32	0.01	0.01	950.20
Multi-Family – Low	0.00	1.28	1.28	0.00	0.00	1.28
Multi-Family – Moderate	0.00	0.75	0.75	0.00	0.00	0.75
Neighborhood Serving Centers and Corridors – Low	0.00	228.04	228.04	0.00	0.00	228.98
Neighborhood Serving Centers and Corridors – Moderate	0.00	357.36	357.36	0.00	0.00	358.83
Community Commercial	0.00	473.25	473.25	0.00	0.00	475.19
Transit-Oriented Development - Low	0.00	249.19	249.19	0.00	0.00	250.21
Transit-Oriented Development - Moderate	0.00	59.17	59.17	0.00	0.00	59.41
Neo-Industrial	0.00	21.21	21.21	0.00	0.00	21.30
Industrial	0.00	501.40	501.40	0.00	0.00	503.45
Downtown	0.00	7,077.10	7,077.10	0.06	0.06	7,106.15
Waterfront	0.00	1,087.88	1,087.88	0.01	0.01	1,092.35
Regional Serving Facility	0.00	2,849.74	2,849.74	0.02	0.02	2,861.44
2040 Total	0.00	13,906.51	13,906.51	0.12	0.12	13,963.61

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Convenience Market						
Open Space	0.00	417.69	417.69	0.00	0.00	419.24
Founding and Contemporary Neighborhood	0.00	2,729.67	2,729.67	0.03	0.03	2,739.78
Multi-Family – Low	0.00	11.12	11.12	0.00	0.00	11.16
Multi-Family – Moderate	0.00	6.53	6.53	0.00	0.00	6.55
Neighborhood Serving Centers and Corridors – Low	0.00	1,109.78	1,109.78	0.01	0.01	1,113.89
Neighborhood Serving Centers and Corridors – Moderate	0.00	1,230.37	1,230.37	0.01	0.01	1,234.93
Community Commercial	0.00	2,526.84	2,526.84	0.03	0.03	2,536.20
Transit-Oriented Development - Low	0.00	532.52	532.52	0.01	0.01	534.49
Transit-Oriented Development - Moderate	0.00	381.91	381.91	0.00	0.00	383.32
Neo-Industrial	0.00	244.52	244.52	0.00	0.00	245.43
Industrial	0.00	185.41	185.41	0.00	0.00	186.10
Downtown	0.00	1,360.63	1,360.63	0.01	0.01	1,365.67
Waterfront	0.00	1,253.43	1,253.43	0.01	0.01	1,258.07
Regional Serving Facility	0.00	706.44	706.44	0.01	0.01	709.06
2040 Total	0.00	12,696.87	12,696.87	0.13	0.13	12,743.90

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Pharmacy/Drug Store						
Open Space	0.00	417.69	417.69	0.00	0.00	419.24
Founding and Contemporary Neighborhood	0.00	2,729.67	2,729.67	0.03	0.03	2,739.78
Multi-Family – Low	0.00	11.12	11.12	0.00	0.00	11.16
Multi-Family – Moderate	0.00	6.53	6.53	0.00	0.00	6.55
Neighborhood Serving Centers and Corridors – Low	0.00	1,109.78	1,109.78	0.01	0.01	1,113.89
Neighborhood Serving Centers and Corridors – Moderate	0.00	1,230.37	1,230.37	0.01	0.01	1,234.93
Community Commercial	0.00	2,526.84	2,526.84	0.03	0.03	2,536.20
Transit-Oriented Development - Low	0.00	532.52	532.52	0.01	0.01	534.49
Transit-Oriented Development - Moderate	0.00	381.91	381.91	0.00	0.00	383.32
Neo-Industrial	0.00	244.52	244.52	0.00	0.00	245.43
Industrial	0.00	185.41	185.41	0.00	0.00	186.10
Downtown	0.00	1,360.63	1,360.63	0.01	0.01	1,365.67
Waterfront	0.00	1,253.43	1,253.43	0.01	0.01	1,258.07
Regional Serving Facility	0.00	706.44	706.44	0.01	0.01	709.06
2040 Total	0.00	12,696.87	12,696.87	0.13	0.13	12,743.90

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Regional Shopping Center						
Open Space	0.00	417.69	417.69	0.00	0.00	419.24
Founding and Contemporary Neighborhood	0.00	2,729.67	2,729.67	0.03	0.03	2,739.78
Multi-Family – Low	0.00	11.12	11.12	0.00	0.00	11.16
Multi-Family – Moderate	0.00	6.53	6.53	0.00	0.00	6.55
Neighborhood Serving Centers and Corridors – Low	0.00	1,109.78	1,109.78	0.01	0.01	1,113.89
Neighborhood Serving Centers and Corridors – Moderate	0.00	1,230.37	1,230.37	0.01	0.01	1,234.93
Community Commercial	0.00	2,526.84	2,526.84	0.03	0.03	2,536.20
Transit-Oriented Development - Low	0.00	532.52	532.52	0.01	0.01	534.49
Transit-Oriented Development - Moderate	0.00	381.91	381.91	0.00	0.00	383.32
Neo-Industrial	0.00	244.52	244.52	0.00	0.00	245.43
Industrial	0.00	185.41	185.41	0.00	0.00	186.10
Downtown	0.00	1,360.63	1,360.63	0.01	0.01	1,365.67
Waterfront	0.00	1,253.43	1,253.43	0.01	0.01	1,258.07
Regional Serving Facility	0.00	706.44	706.44	0.01	0.01	709.06
2040 Total	0.00	12,696.87	12,696.87	0.13	0.13	12,743.90

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Strip Mall						
Open Space	0.00	417.69	417.69	0.00	0.00	419.24
Founding and Contemporary Neighborhood	0.00	2,729.67	2,729.67	0.03	0.03	2,739.78
Multi-Family – Low	0.00	11.12	11.12	0.00	0.00	11.16
Multi-Family – Moderate	0.00	6.53	6.53	0.00	0.00	6.55
Neighborhood Serving Centers and Corridors – Low	0.00	1,109.78	1,109.78	0.01	0.01	1,113.89
Neighborhood Serving Centers and Corridors – Moderate	0.00	1,230.37	1,230.37	0.01	0.01	1,234.93
Community Commercial	0.00	2,526.84	2,526.84	0.03	0.03	2,536.20
Transit-Oriented Development - Low	0.00	532.52	532.52	0.01	0.01	534.49
Transit-Oriented Development - Moderate	0.00	381.91	381.91	0.00	0.00	383.32
Neo-Industrial	0.00	244.52	244.52	0.00	0.00	245.43
Industrial	0.00	185.41	185.41	0.00	0.00	186.10
Downtown	0.00	1,360.63	1,360.63	0.01	0.01	1,365.67
Waterfront	0.00	1,253.43	1,253.43	0.01	0.01	1,258.07
Regional Serving Facility	0.00	706.44	706.44	0.01	0.01	709.06
2040 Total	0.00	12,696.87	12,696.87	0.13	0.13	12,743.90

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Light Industrial						
Open Space	0.00	1,103.34	1,103.34	0.01	0.01	1,108.23
Founding and Contemporary Neighborhood	0.00	605.30	605.30	0.01	0.01	607.99
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	95.44	95.44	0.00	0.00	95.86
Neighborhood Serving Centers and Corridors – Moderate	0.00	160.21	160.21	0.00	0.00	160.92
Community Commercial	0.00	1,022.87	1,022.87	0.01	0.01	1,027.41
Transit-Oriented Development - Low	0.00	6.52	6.52	0.00	0.00	6.55
Transit-Oriented Development - Moderate	0.00	4.74	4.74	0.00	0.00	4.76
Neo-Industrial	0.00	1,361.06	1,361.06	0.01	0.01	1,367.10
Industrial	0.00	3,840.44	3,840.44	0.03	0.03	3,857.48
Downtown	0.00	58.59	58.59	0.00	0.00	58.85
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	15,426.62	15,426.62	0.13	0.13	15,495.06
2040 Total	0.00	23,685.14	23,685.14	0.20	0.20	23,790.22

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Manufacturing						
Open Space	0.00	1,103.34	1,103.34	0.01	0.01	1,108.23
Founding and Contemporary Neighborhood	0.00	605.30	605.30	0.01	0.01	607.99
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	95.44	95.44	0.00	0.00	95.86
Neighborhood Serving Centers and Corridors – Moderate	0.00	160.21	160.21	0.00	0.00	160.92
Community Commercial	0.00	1,022.87	1,022.87	0.01	0.01	1,027.41
Transit-Oriented Development - Low	0.00	6.52	6.52	0.00	0.00	6.55
Transit-Oriented Development - Moderate	0.00	4.74	4.74	0.00	0.00	4.76
Neo-Industrial	0.00	1,361.06	1,361.06	0.01	0.01	1,367.10
Industrial	0.00	3,840.44	3,840.44	0.03	0.03	3,857.48
Downtown	0.00	58.59	58.59	0.00	0.00	58.85
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	15,426.62	15,426.62	0.13	0.13	15,495.06
2040 Total	0.00	23,685.14	23,685.14	0.20	0.20	23,790.22

	Energy Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Research & Development						
Open Space	0.00	1,103.34	1,103.34	0.01	0.01	1,108.23
Founding and Contemporary Neighborhood	0.00	605.30	605.30	0.01	0.01	607.99
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	95.44	95.44	0.00	0.00	95.86
Neighborhood Serving Centers and Corridors – Moderate	0.00	160.21	160.21	0.00	0.00	160.92
Community Commercial	0.00	1,022.87	1,022.87	0.01	0.01	1,027.41
Transit-Oriented Development - Low	0.00	6.52	6.52	0.00	0.00	6.55
Transit-Oriented Development - Moderate	0.00	4.74	4.74	0.00	0.00	4.76
Neo-Industrial	0.00	1,361.06	1,361.06	0.01	0.01	1,367.10
Industrial	0.00	3,840.44	3,840.44	0.03	0.03	3,857.48
Downtown	0.00	58.59	58.59	0.00	0.00	58.85
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	0.00	15,426.62	15,426.62	0.13	0.13	15,495.06
2040 Total	0.00	23,685.14	23,685.14	0.20	0.20	23,790.22

2040 GHG Emissions	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	15,428.90	0.00	15,428.90	912.55	0.00	38,226.18
Multi-Family – Low	152.55	0.00	152.55	9.02	0.00	377.94
Multi-Family – Moderate	102.61	0.00	102.61	6.07	0.00	254.23
Neighborhood Serving Centers and Corridors – Low	189.75	0.00	189.75	11.22	0.00	470.11
Neighborhood Serving Centers and Corridors – Moderate	121.34	0.00	121.34	7.18	0.00	300.62
Community Commercial	21.22	0.00	21.22	1.26	0.00	52.58
Transit-Oriented Development - Low	67.91	0.00	67.91	4.02	0.00	168.25
Transit-Oriented Development - Moderate	48.69	0.00	48.69	2.88	0.00	120.62
Neo-Industrial	21.97	0.00	21.97	1.30	0.00	54.43
Industrial	36.20	0.00	36.20	2.14	0.00	89.69
Downtown	86.14	0.00	86.14	5.09	0.00	213.41
Waterfront	1.50	0.00	1.50	0.09	0.00	3.71
Regional Serving Facility	1.50	0.00	1.50	0.09	0.00	3.71
2040 Total	16,280.26	0.00	16,280.26	962.90	0.00	40,335.50

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	1,382.48	0.00	1,382.48	81.71	0.00	3,425.11
Multi-Family – Low	244.74	0.00	244.74	14.46	0.00	606.34
Multi-Family – Moderate	436.00	0.00	436.00	25.77	0.00	1,080.19
Neighborhood Serving Centers and Corridors – Low	174.42	0.00	174.42	10.31	0.00	432.14
Neighborhood Serving Centers and Corridors – Moderate	353.18	0.00	353.18	20.87	0.00	875.00
Community Commercial	88.30	0.00	88.30	5.22	0.00	218.77
Transit-Oriented Development - Low	240.38	0.00	240.38	14.21	0.00	595.54
Transit-Oriented Development - Moderate	253.98	0.00	253.98	15.01	0.00	629.24
Neo-Industrial	43.45	0.00	43.45	2.57	0.00	107.65
Industrial	25.30	0.00	25.30	1.50	0.00	62.69
Downtown	510.92	0.00	510.92	30.20	0.00	1,265.80
Waterfront	91.41	0.00	91.41	5.40	0.00	226.48
Regional Serving Facility	111.74	0.00	111.74	6.60	0.00	276.83
2040 Total	3,956.30	0.00	3,956.30	233.83	0.00	9,801.77

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Mid Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	1,382.50	0.00	1,382.50	81.70	0.00	3,425.06
Multi-Family – Low	244.74	0.00	244.74	14.46	0.00	606.33
Multi-Family – Moderate	436.01	0.00	436.01	25.77	0.00	1,080.18
Neighborhood Serving Centers and Corridors – Low	174.43	0.00	174.43	10.31	0.00	432.13
Neighborhood Serving Centers and Corridors – Moderate	353.18	0.00	353.18	20.87	0.00	874.98
Community Commercial	88.30	0.00	88.30	5.22	0.00	218.77
Transit-Oriented Development - Low	240.38	0.00	240.38	14.21	0.00	595.53
Transit-Oriented Development - Moderate	253.98	0.00	253.98	15.01	0.00	629.23
Neo-Industrial	43.45	0.00	43.45	2.57	0.00	107.65
Industrial	25.30	0.00	25.30	1.50	0.00	62.69
Downtown	510.92	0.00	510.92	30.19	0.00	1,265.78
Waterfront	91.42	0.00	91.42	5.40	0.00	226.48
Regional Serving Facility	111.74	0.00	111.74	6.60	0.00	276.83
2040 Total	3,956.35	0.00	3,956.35	233.82	0.00	9,801.63

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Condos/Townhouse						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	582.10	0.00	582.10	34.40	0.00	1,442.15
Multi-Family – Low	103.05	0.00	103.05	6.09	0.00	255.30
Multi-Family – Moderate	183.58	0.00	183.58	10.85	0.00	454.82
Neighborhood Serving Centers and Corridors – Low	73.44	0.00	73.44	4.34	0.00	181.95
Neighborhood Serving Centers and Corridors – Moderate	148.71	0.00	148.71	8.79	0.00	368.42
Community Commercial	37.18	0.00	37.18	2.20	0.00	92.11
Transit-Oriented Development - Low	101.21	0.00	101.21	5.98	0.00	250.75
Transit-Oriented Development - Moderate	106.94	0.00	106.94	6.32	0.00	264.94
Neo-Industrial	18.29	0.00	18.29	1.08	0.00	45.33
Industrial	10.65	0.00	10.65	0.63	0.00	26.40
Downtown	215.12	0.00	215.12	12.71	0.00	532.97
Waterfront	38.49	0.00	38.49	2.27	0.00	95.36
Regional Serving Facility	47.05	0.00	47.05	2.78	0.00	116.56
2040 Total	1,665.81	0.00	1,665.81	98.45	0.00	4,127.06

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
City Park						
Open Space	0.34	0.00	0.34	0.02	0.00	0.85
Founding and Contemporary Neighborhood	0.93	0.00	0.93	0.05	0.00	2.30
Multi-Family – Low	0.01	0.00	0.01	0.00	0.00	0.02
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.02	0.00	0.02	0.00	0.00	0.05
Neighborhood Serving Centers and Corridors – Moderate	0.02	0.00	0.02	0.00	0.00	0.04
Community Commercial	0.01	0.00	0.01	0.00	0.00	0.04
Transit-Oriented Development - Low	0.04	0.00	0.04	0.00	0.00	0.09
Transit-Oriented Development - Moderate	0.04	0.00	0.04	0.00	0.00	0.09
Neo-Industrial	0.00	0.00	0.00	0.00	0.00	0.01
Industrial	0.02	0.00	0.02	0.00	0.00	0.05
Downtown	0.08	0.00	0.08	0.00	0.00	0.19
Waterfront	0.05	0.00	0.05	0.00	0.00	0.13
Regional Serving Facility	0.79	0.00	0.79	0.04	0.00	1.95
2040 Total	2.34	0.00	2.34	0.13	0.00	5.80

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Golf Course						
Open Space	3.53	0.00	3.53	0.21	0.00	8.75
Founding and Contemporary Neighborhood	9.58	0.00	9.58	0.57	0.00	23.73
Multi-Family – Low	0.10	0.00	0.10	0.01	0.00	0.25
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.19	0.00	0.19	0.01	0.00	0.48
Neighborhood Serving Centers and Corridors – Moderate	0.16	0.00	0.16	0.01	0.00	0.40
Community Commercial	0.15	0.00	0.15	0.01	0.00	0.38
Transit-Oriented Development - Low	0.37	0.00	0.37	0.02	0.00	0.92
Transit-Oriented Development - Moderate	0.37	0.00	0.37	0.02	0.00	0.91
Neo-Industrial	0.02	0.00	0.02	0.00	0.00	0.06
Industrial	0.21	0.00	0.21	0.01	0.00	0.53
Downtown	0.80	0.00	0.80	0.05	0.00	1.98
Waterfront	0.55	0.00	0.55	0.03	0.00	1.35
Regional Serving Facility	8.13	0.00	8.13	0.48	0.00	20.15
2040 Total	24.18	0.00	24.18	1.43	0.00	59.89

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Library						
Open Space	152.40	0.00	152.40	9.01	0.00	377.57
Founding and Contemporary Neighborhood	413.22	0.00	413.22	24.42	0.00	1,023.72
Multi-Family – Low	4.44	0.00	4.44	0.26	0.00	10.99
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	8.31	0.00	8.31	0.49	0.00	20.59
Neighborhood Serving Centers and Corridors – Moderate	7.00	0.00	7.00	0.41	0.00	17.34
Community Commercial	6.67	0.00	6.67	0.39	0.00	16.54
Transit-Oriented Development - Low	16.06	0.00	16.06	0.95	0.00	39.79
Transit-Oriented Development - Moderate	15.80	0.00	15.80	0.93	0.00	39.14
Neo-Industrial	1.02	0.00	1.02	0.06	0.00	2.53
Industrial	9.18	0.00	9.18	0.54	0.00	22.75
Downtown	34.46	0.00	34.46	2.04	0.00	85.37
Waterfront	23.58	0.00	23.58	1.39	0.00	58.41
Regional Serving Facility	350.81	0.00	350.81	20.73	0.00	869.11
2040 Total	1,042.94	0.00	1,042.94	61.64	0.00	2,583.84

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Junior College						
Open Space	215.12	0.00	215.12	12.71	0.00	532.94
Founding and Contemporary Neighborhood	583.26	0.00	583.26	34.47	0.00	1,445.00
Multi-Family – Low	6.26	0.00	6.26	0.37	0.00	15.51
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	11.73	0.00	11.73	0.69	0.00	29.06
Neighborhood Serving Centers and Corridors – Moderate	9.88	0.00	9.88	0.58	0.00	24.47
Community Commercial	9.42	0.00	9.42	0.56	0.00	23.34
Transit-Oriented Development - Low	22.67	0.00	22.67	1.34	0.00	56.16
Transit-Oriented Development - Moderate	22.30	0.00	22.30	1.32	0.00	55.25
Neo-Industrial	1.44	0.00	1.44	0.09	0.00	3.57
Industrial	12.96	0.00	12.96	0.77	0.00	32.12
Downtown	48.64	0.00	48.64	2.87	0.00	120.50
Waterfront	33.28	0.00	33.28	1.97	0.00	82.45
Regional Serving Facility	495.17	0.00	495.17	29.27	0.00	1,226.76
2040 Total	1,472.13	0.00	1,472.13	87.01	0.00	3,647.13

Waste Sources
GHG Emissions, MT/Year

General Office Building	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	3.87	0.00	3.87	0.23	0.00	9.59
Founding and Contemporary Neighborhood	68.06	0.00	68.06	4.02	0.00	168.61
Multi-Family – Low	0.09	0.00	0.09	0.01	0.00	0.23
Multi-Family – Moderate	0.05	0.00	0.05	0.00	0.00	0.13
Neighborhood Serving Centers and Corridors – Low	16.40	0.00	16.40	0.97	0.00	40.63
Neighborhood Serving Centers and Corridors – Moderate	25.70	0.00	25.70	1.52	0.00	63.67
Community Commercial	34.03	0.00	34.03	2.01	0.00	84.32
Transit-Oriented Development - Low	17.92	0.00	17.92	1.06	0.00	44.40
Transit-Oriented Development - Moderate	4.26	0.00	4.26	0.25	0.00	10.54
Neo-Industrial	1.53	0.00	1.53	0.09	0.00	3.78
Industrial	36.06	0.00	36.06	2.13	0.00	89.33
Downtown	508.96	0.00	508.96	30.08	0.00	1,260.92
Waterfront	78.24	0.00	78.24	4.62	0.00	193.83
Regional Serving Facility	204.94	0.00	204.94	12.11	0.00	507.74
2040 Total	1,000.11	0.00	1,000.11	59.11	0.00	2,477.72

Waste Sources
GHG Emissions, MT/Year

Medical Office Building	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	44.96	0.00	44.96	2.66	0.00	111.38
Founding and Contemporary Neighborhood	790.34	0.00	790.34	46.71	0.00	1,958.05
Multi-Family – Low	1.07	0.00	1.07	0.06	0.00	2.65
Multi-Family – Moderate	0.63	0.00	0.63	0.04	0.00	1.55
Neighborhood Serving Centers and Corridors – Low	190.46	0.00	190.46	11.26	0.00	471.85
Neighborhood Serving Centers and Corridors – Moderate	298.46	0.00	298.46	17.64	0.00	739.42
Community Commercial	395.25	0.00	395.25	23.36	0.00	979.21
Transit-Oriented Development - Low	208.12	0.00	208.12	12.30	0.00	515.60
Transit-Oriented Development - Moderate	49.41	0.00	49.41	2.92	0.00	122.42
Neo-Industrial	17.72	0.00	17.72	1.05	0.00	43.90
Industrial	418.75	0.00	418.75	24.75	0.00	1,037.45
Downtown	5,910.63	0.00	5,910.63	349.31	0.00	14,643.35
Waterfront	908.57	0.00	908.57	53.69	0.00	2,250.95
Regional Serving Facility	2,380.04	0.00	2,380.04	140.66	0.00	5,896.44
2040 Total	11,614.41	0.00	11,614.41	686.39	0.00	28,774.21

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Convenience Market						
Open Space	113.85	0.00	113.85	6.73	0.00	282.05
Founding and Contemporary Neighborhood	744.00	0.00	744.00	43.97	0.00	1,843.22
Multi-Family – Low	3.03	0.00	3.03	0.18	0.00	7.51
Multi-Family – Moderate	1.78	0.00	1.78	0.11	0.00	4.41
Neighborhood Serving Centers and Corridors – Low	302.48	0.00	302.48	17.88	0.00	749.39
Neighborhood Serving Centers and Corridors – Moderate	335.35	0.00	335.35	19.82	0.00	830.81
Community Commercial	688.71	0.00	688.71	40.70	0.00	1,706.25
Transit-Oriented Development - Low	145.14	0.00	145.14	8.58	0.00	359.59
Transit-Oriented Development - Moderate	104.09	0.00	104.09	6.15	0.00	257.88
Neo-Industrial	66.65	0.00	66.65	3.94	0.00	165.12
Industrial	50.54	0.00	50.54	2.99	0.00	125.20
Downtown	370.85	0.00	370.85	21.92	0.00	918.77
Waterfront	341.63	0.00	341.63	20.19	0.00	846.38
Regional Serving Facility	192.55	0.00	192.55	11.38	0.00	477.03
2040 Total	3,460.65	0.00	3,460.65	204.52	0.00	8,573.60

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Pharmacy/Drug Store						
Open Space	113.91	0.00	113.91	6.73	0.00	282.20
Founding and Contemporary Neighborhood	744.39	0.00	744.39	43.99	0.00	1,844.20
Multi-Family – Low	3.03	0.00	3.03	0.18	0.00	7.51
Multi-Family – Moderate	1.78	0.00	1.78	0.11	0.00	4.41
Neighborhood Serving Centers and Corridors – Low	302.64	0.00	302.64	17.89	0.00	749.79
Neighborhood Serving Centers and Corridors – Moderate	335.53	0.00	335.53	19.83	0.00	831.26
Community Commercial	689.08	0.00	689.08	40.72	0.00	1,707.17
Transit-Oriented Development - Low	145.22	0.00	145.22	8.58	0.00	359.78
Transit-Oriented Development - Moderate	104.15	0.00	104.15	6.15	0.00	258.02
Neo-Industrial	66.68	0.00	66.68	3.94	0.00	165.20
Industrial	50.56	0.00	50.56	2.99	0.00	125.27
Downtown	371.05	0.00	371.05	21.93	0.00	919.26
Waterfront	341.82	0.00	341.82	20.20	0.00	846.84
Regional Serving Facility	192.65	0.00	192.65	11.39	0.00	477.28
2040 Total	3,462.50	0.00	3,462.50	204.63	0.00	8,578.18

Waste Sources
GHG Emissions, MT/Year

Regional Shopping Center	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	39.78	0.00	39.78	2.35	0.00	98.55
Founding and Contemporary Neighborhood	259.95	0.00	259.95	15.36	0.00	644.02
Multi-Family – Low	1.06	0.00	1.06	0.06	0.00	2.62
Multi-Family – Moderate	0.62	0.00	0.62	0.04	0.00	1.54
Neighborhood Serving Centers and Corridors – Low	105.69	0.00	105.69	6.25	0.00	261.84
Neighborhood Serving Centers and Corridors – Moderate	117.17	0.00	117.17	6.92	0.00	290.29
Community Commercial	240.64	0.00	240.64	14.22	0.00	596.17
Transit-Oriented Development - Low	50.71	0.00	50.71	3.00	0.00	125.64
Transit-Oriented Development - Moderate	36.37	0.00	36.37	2.15	0.00	90.10
Neo-Industrial	23.29	0.00	23.29	1.38	0.00	57.69
Industrial	17.66	0.00	17.66	1.04	0.00	43.74
Downtown	129.58	0.00	129.58	7.66	0.00	321.02
Waterfront	119.37	0.00	119.37	7.05	0.00	295.73
Regional Serving Facility	67.28	0.00	67.28	3.98	0.00	166.67
2040 Total	1,209.15	0.00	1,209.15	71.46	0.00	2,995.62

Waste Sources
GHG Emissions, MT/Year

Strip Mall	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	39.78	0.00	39.78	2.35	0.00	98.55
Founding and Contemporary Neighborhood	259.95	0.00	259.95	15.36	0.00	644.02
Multi-Family – Low	1.06	0.00	1.06	0.06	0.00	2.62
Multi-Family – Moderate	0.62	0.00	0.62	0.04	0.00	1.54
Neighborhood Serving Centers and Corridors – Low	105.69	0.00	105.69	6.25	0.00	261.84
Neighborhood Serving Centers and Corridors – Moderate	117.17	0.00	117.17	6.92	0.00	290.29
Community Commercial	240.64	0.00	240.64	14.22	0.00	596.17
Transit-Oriented Development - Low	50.71	0.00	50.71	3.00	0.00	125.64
Transit-Oriented Development - Moderate	36.37	0.00	36.37	2.15	0.00	90.10
Neo-Industrial	23.29	0.00	23.29	1.38	0.00	57.69
Industrial	17.66	0.00	17.66	1.04	0.00	43.74
Downtown	129.58	0.00	129.58	7.66	0.00	321.02
Waterfront	119.37	0.00	119.37	7.05	0.00	295.73
Regional Serving Facility	67.28	0.00	67.28	3.98	0.00	166.67
2040 Total	1,209.15	0.00	1,209.15	71.46	0.00	2,995.62

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Light Industrial						
Open Space	101.56	0.00	101.56	6.00	0.00	251.62
Founding and Contemporary Neighborhood	55.72	0.00	55.72	3.29	0.00	138.04
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	8.78	0.00	8.78	0.52	0.00	21.76
Neighborhood Serving Centers and Corridors – Moderate	14.75	0.00	14.75	0.87	0.00	36.54
Community Commercial	94.16	0.00	94.16	5.56	0.00	233.27
Transit-Oriented Development - Low	0.60	0.00	0.60	0.04	0.00	1.49
Transit-Oriented Development - Moderate	0.44	0.00	0.44	0.03	0.00	1.08
Neo-Industrial	125.29	0.00	125.29	7.40	0.00	310.39
Industrial	353.51	0.00	353.51	20.89	0.00	875.82
Downtown	5.39	0.00	5.39	0.32	0.00	13.36
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	1,420.03	0.00	1,420.03	83.92	0.00	3,518.07
2040 Total	2,180.23	0.00	2,180.23	128.84	0.00	5,401.44

	Waste Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Manufacturing						
Open Space	101.56	0.00	101.56	6.00	0.00	251.62
Founding and Contemporary Neighborhood	55.72	0.00	55.72	3.29	0.00	138.04
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	8.78	0.00	8.78	0.52	0.00	21.76
Neighborhood Serving Centers and Corridors – Moderate	14.75	0.00	14.75	0.87	0.00	36.54
Community Commercial	94.16	0.00	94.16	5.56	0.00	233.27
Transit-Oriented Development - Low	0.60	0.00	0.60	0.04	0.00	1.49
Transit-Oriented Development - Moderate	0.44	0.00	0.44	0.03	0.00	1.08
Neo-Industrial	125.29	0.00	125.29	7.40	0.00	310.39
Industrial	353.51	0.00	353.51	20.89	0.00	875.82
Downtown	5.39	0.00	5.39	0.32	0.00	13.36
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	1,420.03	0.00	1,420.03	83.92	0.00	3,518.07
2040 Total	2,180.23	0.00	2,180.23	128.84	0.00	5,401.44

Waste Sources

GHG Emissions, MT/Year

Research & Development	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	6.22	0.00	6.22	0.37	0.00	15.42
Founding and Contemporary Neighborhood	3.41	0.00	3.41	0.20	0.00	8.46
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.54	0.00	0.54	0.03	0.00	1.33
Neighborhood Serving Centers and Corridors – Moderate	0.90	0.00	0.90	0.05	0.00	2.24
Community Commercial	5.77	0.00	5.77	0.34	0.00	14.30
Transit-Oriented Development - Low	0.04	0.00	0.04	0.00	0.00	0.09
Transit-Oriented Development - Moderate	0.03	0.00	0.03	0.00	0.00	0.07
Neo-Industrial	7.68	0.00	7.68	0.45	0.00	19.02
Industrial	21.67	0.00	21.67	1.28	0.00	53.67
Downtown	0.33	0.00	0.33	0.02	0.00	0.82
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	87.03	0.00	87.03	5.14	0.00	215.60
2040 Total	133.62	0.00	133.62	7.89	0.00	331.03

2040 GHG Emissions	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Single Family Residential						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	1,277.16	12,845.74	14,122.90	131.84	3.30	18,372.55
Multi-Family – Low	12.63	127.01	139.63	1.30	0.03	181.65
Multi-Family – Moderate	8.49	85.43	93.93	0.88	0.02	122.19
Neighborhood Serving Centers and Corridors – Low	15.71	157.98	173.69	1.62	0.04	225.95
Neighborhood Serving Centers and Corridors – Moderate	10.04	101.02	111.07	1.04	0.03	144.49
Community Commercial	1.76	17.67	19.43	0.18	0.00	25.27
Transit-Oriented Development - Low	5.62	56.54	62.16	0.58	0.01	80.87
Transit-Oriented Development - Moderate	4.03	40.53	44.56	0.42	0.01	57.97
Neo-Industrial	1.82	18.29	20.11	0.19	0.00	26.16
Industrial	3.00	30.14	33.14	0.31	0.01	43.11
Downtown	7.13	71.71	78.84	0.74	0.02	102.57
Waterfront	0.12	1.25	1.37	0.01	0.00	1.78
Regional Serving Facility	0.12	1.25	1.37	0.01	0.00	1.78
2040 Total	1,347.63	13,554.57	14,902.20	139.11	3.48	19,386.34

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Low Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	306.01	3,077.45	3,383.46	31.55	0.77	4,401.63
Multi-Family – Low	54.17	544.79	598.96	5.59	0.14	779.21
Multi-Family – Moderate	96.51	970.55	1,067.06	9.95	0.24	1,388.16
Neighborhood Serving Centers and Corridors – Low	38.61	388.28	426.88	3.98	0.10	555.34
Neighborhood Serving Centers and Corridors – Moderate	78.18	786.18	864.36	8.06	0.20	1,124.46
Community Commercial	19.55	196.56	216.11	2.02	0.05	281.14
Transit-Oriented Development - Low	53.21	535.09	588.30	5.49	0.13	765.33
Transit-Oriented Development - Moderate	56.22	565.37	621.59	5.80	0.14	808.64
Neo-Industrial	9.62	96.72	106.34	0.99	0.02	138.34
Industrial	5.60	56.33	61.93	0.58	0.01	80.57
Downtown	113.09	1,137.32	1,250.41	11.66	0.28	1,626.69
Waterfront	20.23	203.49	223.73	2.09	0.05	291.05
Regional Serving Facility	24.73	248.73	273.47	2.55	0.06	355.76
2040 Total	875.73	8,806.87	9,682.60	90.30	2.20	12,596.34

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Apartments Mid Rise						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	0.00	1,377.47	1,377.47	0.12	0.02	1,387.52
Multi-Family – Low	0.00	243.85	243.85	0.02	0.00	245.63
Multi-Family – Moderate	0.00	434.42	434.42	0.04	0.01	437.59
Neighborhood Serving Centers and Corridors – Low	0.00	173.79	173.79	0.02	0.00	175.06
Neighborhood Serving Centers and Corridors – Moderate	0.00	351.90	351.90	0.03	0.01	354.46
Community Commercial	0.00	87.98	87.98	0.01	0.00	88.62
Transit-Oriented Development - Low	0.00	239.51	239.51	0.02	0.00	241.26
Transit-Oriented Development - Moderate	0.00	253.06	253.06	0.02	0.00	254.91
Neo-Industrial	0.00	43.29	43.29	0.00	0.00	43.61
Industrial	0.00	25.21	25.21	0.00	0.00	25.40
Downtown	0.00	509.07	509.07	0.05	0.01	512.78
Waterfront	0.00	91.08	91.08	0.01	0.00	91.75
Regional Serving Facility	0.00	111.33	111.33	0.01	0.00	112.15
2040 Total	0.00	3,941.97	3,941.97	0.36	0.07	3,970.74

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Condos/Townhouse						
Open Space	0.00	0.00	0.00	0.00	0.00	0.00
Founding and Contemporary Neighborhood	128.85	1,295.77	1,424.62	13.29	0.32	1,853.32
Multi-Family – Low	22.81	229.39	252.20	2.35	0.06	328.09
Multi-Family – Moderate	40.64	408.65	449.29	4.19	0.10	584.49
Neighborhood Serving Centers and Corridors – Low	16.26	163.48	179.74	1.68	0.04	233.83
Neighborhood Serving Centers and Corridors – Moderate	32.92	331.02	363.94	3.39	0.08	473.46
Community Commercial	8.23	82.76	90.99	0.85	0.02	118.38
Transit-Oriented Development - Low	22.40	225.30	247.71	2.31	0.06	322.25
Transit-Oriented Development - Moderate	23.67	238.05	261.72	2.44	0.06	340.48
Neo-Industrial	4.05	40.73	44.77	0.42	0.01	58.25
Industrial	2.36	23.72	26.08	0.24	0.01	33.92
Downtown	47.62	478.87	526.49	4.91	0.12	684.92
Waterfront	8.52	85.68	94.20	0.88	0.02	122.55
Regional Serving Facility	10.41	104.73	115.14	1.07	0.03	149.79
2040 Total	368.73	3,708.16	4,076.89	38.02	0.93	5,303.72

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
City Park						
Open Space	0.00	39.46	39.46	0.02	0.02	39.61
Founding and Contemporary Neighborhood	0.00	107.00	107.00	0.05	0.05	107.39
Multi-Family – Low	0.00	1.15	1.15	0.00	0.00	1.15
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	2.15	2.15	0.00	0.00	2.16
Neighborhood Serving Centers and Corridors – Moderate	0.00	1.81	1.81	0.00	0.00	1.82
Community Commercial	0.00	1.73	1.73	0.00	0.00	1.73
Transit-Oriented Development - Low	0.00	4.16	4.16	0.00	0.00	4.17
Transit-Oriented Development - Moderate	0.00	4.09	4.09	0.00	0.00	4.11
Neo-Industrial	0.00	0.26	0.26	0.00	0.00	0.27
Industrial	0.00	2.38	2.38	0.00	0.00	2.39
Downtown	0.00	8.92	8.92	0.00	0.00	8.96
Waterfront	0.00	6.11	6.11	0.00	0.00	6.13
Regional Serving Facility	0.00	90.84	90.84	0.04	0.04	91.17
2040 Total	0.00	270.07	270.07	0.13	0.13	271.04

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Golf Course						
Open Space	0.00	39.46	39.46	0.02	0.02	39.61
Founding and Contemporary Neighborhood	0.00	107.00	107.00	0.05	0.05	107.39
Multi-Family – Low	0.00	1.15	1.15	0.00	0.00	1.15
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.00	2.15	2.15	0.00	0.00	2.16
Neighborhood Serving Centers and Corridors – Moderate	0.00	1.81	1.81	0.00	0.00	1.82
Community Commercial	0.00	1.73	1.73	0.00	0.00	1.73
Transit-Oriented Development - Low	0.00	4.16	4.16	0.00	0.00	4.17
Transit-Oriented Development - Moderate	0.00	4.09	4.09	0.00	0.00	4.11
Neo-Industrial	0.00	0.26	0.26	0.00	0.00	0.27
Industrial	0.00	2.38	2.38	0.00	0.00	2.39
Downtown	0.00	8.92	8.92	0.00	0.00	8.96
Waterfront	0.00	6.11	6.11	0.00	0.00	6.13
Regional Serving Facility	0.00	90.84	90.84	0.04	0.04	91.17
2040 Total	0.00	270.07	270.07	0.13	0.13	271.04

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Library						
Open Space	8.09	123.51	131.61	0.84	0.02	158.68
Founding and Contemporary Neighborhood	21.94	334.90	356.83	2.27	0.05	430.23
Multi-Family – Low	0.24	3.59	3.83	0.02	0.00	4.62
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.44	6.73	7.18	0.05	0.00	8.65
Neighborhood Serving Centers and Corridors – Moderate	0.37	5.67	6.04	0.04	0.00	7.29
Community Commercial	0.35	5.41	5.76	0.04	0.00	6.95
Transit-Oriented Development - Low	0.85	13.02	13.87	0.09	0.00	16.72
Transit-Oriented Development - Moderate	0.84	12.80	13.64	0.09	0.00	16.45
Neo-Industrial	0.05	0.83	0.88	0.01	0.00	1.06
Industrial	0.49	7.44	7.93	0.05	0.00	9.56
Downtown	1.83	27.93	29.76	0.19	0.00	35.88
Waterfront	1.25	19.11	20.36	0.13	0.00	24.55
Regional Serving Facility	18.63	284.31	302.94	1.93	0.04	365.25
2040 Total	55.37	845.26	900.64	5.72	0.13	1,085.89

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Junior College						
Open Space	12.68	193.62	206.31	1.31	0.02	248.75
Founding and Contemporary Neighborhood	34.39	524.99	559.38	3.56	0.05	674.44
Multi-Family – Low	0.37	5.63	6.00	0.04	0.00	7.24
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	0.69	10.56	11.25	0.07	0.00	13.56
Neighborhood Serving Centers and Corridors – Moderate	0.58	8.89	9.47	0.06	0.00	11.42
Community Commercial	0.56	8.48	9.04	0.06	0.00	10.89
Transit-Oriented Development - Low	1.34	20.40	21.74	0.14	0.00	26.21
Transit-Oriented Development - Moderate	1.31	20.07	21.39	0.14	0.00	25.79
Neo-Industrial	0.08	1.30	1.38	0.01	0.00	1.67
Industrial	0.76	11.67	12.43	0.08	0.00	14.99
Downtown	2.87	43.78	46.65	0.30	0.00	56.24
Waterfront	1.96	29.95	31.92	0.20	0.00	38.48
Regional Serving Facility	29.20	445.70	474.90	3.02	0.04	572.58
2040 Total	86.80	1,325.05	1,411.86	8.98	0.13	1,702.27

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Office Building						
Open Space	1.16	11.51	12.67	0.12	0.00	16.52
Founding and Contemporary Neighborhood	20.33	202.42	222.75	2.10	0.01	290.37
Multi-Family – Low	0.03	0.27	0.30	0.00	0.00	0.39
Multi-Family – Moderate	0.02	0.16	0.18	0.00	0.00	0.23
Neighborhood Serving Centers and Corridors – Low	4.90	48.78	53.68	0.51	0.00	69.97
Neighborhood Serving Centers and Corridors – Moderate	7.68	76.44	84.12	0.79	0.00	109.65
Community Commercial	10.17	101.23	111.40	1.05	0.00	145.21
Transit-Oriented Development - Low	5.35	53.30	58.66	0.55	0.00	76.46
Transit-Oriented Development - Moderate	1.27	12.66	13.93	0.13	0.00	18.15
Neo-Industrial	0.46	4.54	4.99	0.05	0.00	6.51
Industrial	10.77	107.25	118.02	1.11	0.00	153.85
Downtown	152.02	1,513.83	1,665.85	15.68	0.06	2,171.55
Waterfront	23.37	232.70	256.07	2.41	0.01	333.81
Regional Serving Facility	61.21	609.57	670.79	6.31	0.02	874.42
2040 Total	298.72	2,974.68	3,273.41	30.81	0.12	4,267.09

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Medical Office Building						
Open Space	0.82	6.21	7.02	0.08	0.00	9.73
Founding and Contemporary Neighborhood	14.35	109.09	123.44	1.48	0.01	171.06
Multi-Family – Low	0.02	0.15	0.17	0.00	0.00	0.23
Multi-Family – Moderate	0.01	0.09	0.10	0.00	0.00	0.14
Neighborhood Serving Centers and Corridors – Low	3.46	26.29	29.75	0.36	0.00	41.22
Neighborhood Serving Centers and Corridors – Moderate	5.42	41.20	46.62	0.56	0.00	64.60
Community Commercial	7.18	54.55	61.73	0.74	0.00	85.54
Transit-Oriented Development - Low	3.78	28.73	32.51	0.39	0.00	45.04
Transit-Oriented Development - Moderate	0.90	6.82	7.72	0.09	0.00	10.70
Neo-Industrial	0.32	2.45	2.77	0.03	0.00	3.83
Industrial	7.60	57.80	65.40	0.78	0.00	90.63
Downtown	107.33	815.83	923.16	11.06	0.06	1,279.26
Waterfront	16.50	125.41	141.91	1.70	0.01	196.65
Regional Serving Facility	43.22	328.51	371.73	4.45	0.02	515.12
2040 Total	210.90	1,603.11	1,814.01	21.73	0.12	2,513.75

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Convenience Market						
Open Space	4.39	43.67	48.06	0.45	0.00	62.64
Founding and Contemporary Neighborhood	28.66	285.39	314.05	2.96	0.03	409.39
Multi-Family – Low	0.12	1.16	1.28	0.01	0.00	1.67
Multi-Family – Moderate	0.07	0.68	0.75	0.01	0.00	0.98
Neighborhood Serving Centers and Corridors – Low	11.65	116.03	127.68	1.20	0.01	166.44
Neighborhood Serving Centers and Corridors – Moderate	12.92	128.64	141.56	1.33	0.01	184.53
Community Commercial	26.53	264.18	290.72	2.74	0.03	378.97
Transit-Oriented Development - Low	5.59	55.68	61.27	0.58	0.01	79.87
Transit-Oriented Development - Moderate	4.01	39.93	43.94	0.41	0.00	57.28
Neo-Industrial	2.57	25.57	28.13	0.26	0.00	36.67
Industrial	1.95	19.38	21.33	0.20	0.00	27.81
Downtown	14.29	142.26	156.54	1.47	0.01	204.06
Waterfront	13.16	131.05	144.21	1.36	0.01	187.99
Regional Serving Facility	7.42	73.86	81.28	0.77	0.01	105.95
2040 Total	133.32	1,327.48	1,460.79	13.75	0.13	1,904.23

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Pharmacy/Drug Store						
Open Space	4.17	41.53	45.70	0.43	0.00	59.58
Founding and Contemporary Neighborhood	27.26	271.43	298.68	2.81	0.03	389.35
Multi-Family – Low	0.11	1.11	1.22	0.01	0.00	1.59
Multi-Family – Moderate	0.07	0.65	0.71	0.01	0.00	0.93
Neighborhood Serving Centers and Corridors – Low	11.08	110.35	121.43	1.14	0.01	158.30
Neighborhood Serving Centers and Corridors – Moderate	12.29	122.34	134.63	1.27	0.01	175.50
Community Commercial	25.23	251.26	276.49	2.60	0.03	360.42
Transit-Oriented Development - Low	5.32	52.95	58.27	0.55	0.01	75.96
Transit-Oriented Development - Moderate	3.81	37.98	41.79	0.39	0.00	54.47
Neo-Industrial	2.44	24.31	26.76	0.25	0.00	34.88
Industrial	1.85	18.44	20.29	0.19	0.00	26.45
Downtown	13.59	135.29	148.88	1.40	0.01	194.08
Waterfront	12.52	124.64	137.15	1.29	0.01	178.79
Regional Serving Facility	7.05	70.25	77.30	0.73	0.01	100.76
2040 Total	126.79	1,262.52	1,389.30	13.07	0.13	1,811.04

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Regional Shopping Center						
Open Space	4.39	43.67	48.06	0.45	0.00	62.64
Founding and Contemporary Neighborhood	28.66	285.39	314.05	2.96	0.03	409.39
Multi-Family – Low	0.12	1.16	1.28	0.01	0.00	1.67
Multi-Family – Moderate	0.07	0.68	0.75	0.01	0.00	0.98
Neighborhood Serving Centers and Corridors – Low	11.65	116.03	127.68	1.20	0.01	166.44
Neighborhood Serving Centers and Corridors – Moderate	12.92	128.64	141.56	1.33	0.01	184.53
Community Commercial	26.53	264.18	290.72	2.74	0.03	378.97
Transit-Oriented Development - Low	5.59	55.68	61.27	0.58	0.01	79.87
Transit-Oriented Development - Moderate	4.01	39.93	43.94	0.41	0.00	57.28
Neo-Industrial	2.57	25.57	28.13	0.26	0.00	36.67
Industrial	1.95	19.38	21.33	0.20	0.00	27.81
Downtown	14.29	142.26	156.54	1.47	0.01	204.06
Waterfront	13.16	131.05	144.21	1.36	0.01	187.99
Regional Serving Facility	7.42	73.86	81.28	0.77	0.01	105.95
2040 Total	133.32	1,327.48	1,460.79	13.75	0.13	1,904.23

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Strip Mall						
Open Space	4.39	43.67	48.06	0.45	0.00	62.64
Founding and Contemporary Neighborhood	28.66	285.39	314.05	2.96	0.03	409.39
Multi-Family – Low	0.12	1.16	1.28	0.01	0.00	1.67
Multi-Family – Moderate	0.07	0.68	0.75	0.01	0.00	0.98
Neighborhood Serving Centers and Corridors – Low	11.65	116.03	127.68	1.20	0.01	166.44
Neighborhood Serving Centers and Corridors – Moderate	12.92	128.64	141.56	1.33	0.01	184.53
Community Commercial	26.53	264.18	290.72	2.74	0.03	378.97
Transit-Oriented Development - Low	5.59	55.68	61.27	0.58	0.01	79.87
Transit-Oriented Development - Moderate	4.01	39.93	43.94	0.41	0.00	57.28
Neo-Industrial	2.57	25.57	28.13	0.26	0.00	36.67
Industrial	1.95	19.38	21.33	0.20	0.00	27.81
Downtown	14.29	142.26	156.54	1.47	0.01	204.06
Waterfront	13.16	131.05	144.21	1.36	0.01	187.99
Regional Serving Facility	7.42	73.86	81.28	0.77	0.01	105.95
2040 Total	133.32	1,327.48	1,460.79	13.75	0.13	1,904.23

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
General Light Industrial						
Open Space	29.60	193.57	223.18	3.05	0.01	321.29
Founding and Contemporary Neighborhood	16.24	106.20	122.44	1.67	0.01	176.26
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	2.56	16.74	19.30	0.26	0.00	27.79
Neighborhood Serving Centers and Corridors – Moderate	4.30	28.11	32.41	0.44	0.00	46.65
Community Commercial	27.45	179.46	206.90	2.83	0.01	297.86
Transit-Oriented Development - Low	0.17	1.14	1.32	0.02	0.00	1.90
Transit-Oriented Development - Moderate	0.13	0.83	0.96	0.01	0.00	1.38
Neo-Industrial	36.52	238.79	275.31	3.76	0.01	396.34
Industrial	103.05	673.78	776.83	10.61	0.03	1,118.33
Downtown	1.57	10.28	11.85	0.16	0.00	17.06
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	413.93	2,706.49	3,120.42	42.63	0.13	4,492.20
2040 Total	635.52	4,155.39	4,790.91	65.45	0.20	6,897.06

	Water Sources GHG Emissions, MT/Year					
	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Manufacturing						
Open Space	29.60	193.57	223.18	3.05	0.01	321.29
Founding and Contemporary Neighborhood	16.24	106.20	122.44	1.67	0.01	176.26
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	2.56	16.74	19.30	0.26	0.00	27.79
Neighborhood Serving Centers and Corridors – Moderate	4.30	28.11	32.41	0.44	0.00	46.65
Community Commercial	27.45	179.46	206.90	2.83	0.01	297.86
Transit-Oriented Development - Low	0.17	1.14	1.32	0.02	0.00	1.90
Transit-Oriented Development - Moderate	0.13	0.83	0.96	0.01	0.00	1.38
Neo-Industrial	36.52	238.79	275.31	3.76	0.01	396.34
Industrial	103.05	673.78	776.83	10.61	0.03	1,118.33
Downtown	1.57	10.28	11.85	0.16	0.00	17.06
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	413.93	2,706.49	3,120.42	42.63	0.13	4,492.20
2040 Total	635.52	4,155.39	4,790.91	65.45	0.20	6,897.06

Water Sources

GHG Emissions, MT/Year

Research & Development	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Open Space	62.95	411.58	474.53	6.48	0.16	683.14
Founding and Contemporary Neighborhood	34.53	225.80	260.33	3.56	0.09	374.78
Multi-Family – Low	0.00	0.00	0.00	0.00	0.00	0.00
Multi-Family – Moderate	0.00	0.00	0.00	0.00	0.00	0.00
Neighborhood Serving Centers and Corridors – Low	5.44	35.60	41.05	0.56	0.01	59.09
Neighborhood Serving Centers and Corridors – Moderate	9.14	59.76	68.90	0.94	0.02	99.20
Community Commercial	58.36	381.57	439.92	6.01	0.15	633.32
Transit-Oriented Development - Low	0.37	2.43	2.80	0.04	0.00	4.04
Transit-Oriented Development - Moderate	0.27	1.77	2.04	0.03	0.00	2.93
Neo-Industrial	77.65	507.72	585.37	8.00	0.19	842.71
Industrial	219.10	1,432.62	1,651.72	22.56	0.54	2,377.84
Downtown	3.34	21.86	25.20	0.34	0.01	36.28
Waterfront	0.00	0.00	0.00	0.00	0.00	0.00
Regional Serving Facility	880.11	5,754.66	6,634.77	90.64	2.19	9,551.51
2040 Total	1,351.27	8,835.37	10,186.64	139.16	3.36	14,664.84

Table N: Buildout Year 2040 City of Long Beach Major Areas of Change GHG Emissions Inventory

Sector	Criteria Air Pollutant Emissions (lbs/day)					
	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N_2O	CO_2e
Existing Year 2018						
Transportation (2018 emission factors)[1]	-	-	1,369,151	107	78	1,394,808
Area, Residential, Landscaping/Consumer Products[2]	7,445	31,934	39,379	25	25	40,484
Area, Commercial + Industrial Landscaping/Consumer Products[2]	0	1	1	0	0	1
Area, Public Facilities/Institutional Landscaping/Consumer Products[2]	0	0	0	0	0	0
Energy, Residential (natural gas use)[3]	0	437,027	437,027	25	25	438,967
Energy, Commercial + Industrial (natural gas use)[3]	0	208,832	208,832	1	1	209,635
Energy, Public Facilities/Institutional (natural gas use)[3]	0	49,069	49,069	0	0	49,276
Waste, Residential (natural gas use)[4]	23,487	0	23,487	1,389	0	58,191
Waste, Commercial + Industrial (natural gas use)[4]	21,196	0	21,196	1,253	0	52,512
Waste, Public Facilities/Institutional (natural gas use)[4]	2,446	0	2,446	145	0	6,060
Water, Residential, Landscaping/Consumer Products[5]	3,237	49,338	52,575	123	25	60,441
Water, Commercial + Industrial Landscaping/Consumer Products[5]	2,645	39,801	42,446	273	3	51,291
Water, Public Facilities/Institutional Landscaping/Consumer Products[5]	137	5,217	5,354	14	0	5,823
Existing Forecast Land Uses Total	**60,593**	**821,221**	**2,250,965**	**3,356**	**158**	**2,367,487**
Future Year 2040 Existing General Plan (No Project)						
Transportation (2040 emission factors)[1]	-	-	862,923	59	49	878,821
Area, Residential, Landscaping/Consumer Products[2]	0	34,076	34,076	3	1	34,324
Area, Commercial + Industrial Landscaping/Consumer Products[2]	0	1	1	0	0	1
Area, Public Facilities/Institutional Landscaping/Consumer Products[2]	0	1	1	0	0	1
Energy, Residential (natural gas use)[3]	0	314,377	314,377	9	4	315,904
Energy, Commercial + Industrial (natural gas use)[3]	0	149,656	149,656	1	1	150,273
Energy, Public Facilities/Institutional (natural gas use)[3]	0	32,219	32,219	0	0	32,366
Waste, Residential (natural gas use)[4]	24,591	0	24,591	1,454	0	60,926
Waste, Commercial + Industrial (natural gas use)[4]	26,450	0	26,450	1,563	0	65,529
Waste, Public Facilities/Institutional (natural gas use)[4]	2,542	0	2,542	150	0	6,297
Water, Residential, Landscaping/Consumer Products[5]	2,427	27,834	30,262	251	6	38,363
Water, Commercial + Industrial Landscaping/Consumer Products[5]	3,659	26,969	30,628	377	5	42,764
Water, Public Facilities/Institutional Landscaping/Consumer Products[5]	142	2,710	2,853	15	1	3,330
Future Year 2040 Existing General Plan (No Project) Total	**59,811**	**587,843**	**1,510,578**	**3,883**	**67**	**1,628,900**
Service Population[6]	-	-	-	-	-	**666,150**
GHG Emissions per Service Population	-	-	-	-	-	**2.4**
LUE/UDE Year 2040						
Transportation (2040 emission factors)[1]	-	-	874,714	60	50	890,829
Area, Residential, Landscaping/Consumer Products[2]	0	37,075	37,075	3	1	37,345
Area, Commercial + Industrial Landscaping/Consumer Products[2]	0	1	1	0	0	1
Area, Public Facilities/Institutional Landscaping/Consumer Products[2]	0	1	1	0	0	1
Energy, Residential (natural gas use)[3]	0	334,734	334,734	10	5	336,360
Energy, Commercial + Industrial (natural gas use)[3]	0	149,656	149,656	1	1	150,273
Energy, Public Facilities/Institutional (natural gas use)[3]	0	32,219	32,219	0	0	32,366
Waste, Residential (natural gas use)[4]	25,859	0	25,859	1,529	0	64,066
Waste, Commercial + Industrial (natural gas use)[4]	26,450	0	26,450	1,563	0	65,529
Waste, Public Facilities/Institutional (natural gas use)[4]	2,542	0	2,542	150	0	6,297
Water, Residential, Landscaping/Consumer Products[5]	2,592	30,012	32,604	268	7	41,257
Water, Commercial + Industrial Landscaping/Consumer Products[5]	3,659	26,969	30,628	377	5	42,764
Water, Public Facilities/Institutional Landscaping/Consumer Products[5]	142	2,710	2,853	15	1	3,330
Future with Project Total	**61,243**	**613,376**	**1,549,334**	**3,977**	**68**	**1,670,419**
Differences in Emissions for Proposed 2040 GP LUE/UDE vs Existing 2018 GP	**650**	**-207,844**	**-701,631**	**621**	**-90**	**-697,069**
Service Population[6]	-	-	-	-	-	**666,150**
GHG Emissions per Service Population	-	-	-	-	-	**2.5**
Plan-Level Efficiency Standard	-	-	-	-	-	**2.1**
Significant?	-	-	-	-	-	
Differences in Emissions for Proposed 2040 GP LUE/UDE vs Existing GP 2040 (No Project)	**1,432**	**25,533**	**38,756**	**94**	**1**	**41,518**

Source: Compiled by LSA Associates, Inc. (2019).

Long Beach Land Use Elements - Single Family Residential

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	9

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0232	1.0400e-003	0.0406	3.0000e-005		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.2008	0.6629	0.8637	1.0000e-003	1.0000e-005	0.8920
Energy	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	12.2445	12.2445	4.1000e-004	1.5000e-004	12.2987
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.7490	0.0000	0.7490	0.0443	0.0000	1.8557
Water						0.0000	0.0000		0.0000	0.0000	0.0620	1.2471	1.3091	6.4200e-003	1.6000e-004	1.5177
Total	**0.0237**	**4.8400e-003**	**0.0422**	**5.0000e-005**	**0.0000**	**2.0200e-003**	**2.0200e-003**	**0.0000**	**2.0200e-003**	**2.0200e-003**	**1.0118**	**14.1545**	**15.1663**	**0.0521**	**3.2000e-004**	**16.5640**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0222	8.9000e-004	0.0314	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.6629	0.6629	6.0000e-005	1.0000e-005	0.6678
Energy	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	12.2445	12.2445	4.1000e-004	1.5000e-004	12.2987
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.7490	0.0000	0.7490	0.0443	0.0000	1.8557
Water						0.0000	0.0000		0.0000	0.0000	0.0620	1.2471	1.3091	6.4200e-003	1.6000e-004	1.5177
Total	**0.0227**	**4.6900e-003**	**0.0330**	**3.0000e-005**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.8111**	**14.1545**	**14.9655**	**0.0512**	**3.2000e-004**	**16.3398**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.31**	**3.10**	**21.78**	**40.00**	**0.00**	**74.26**	**74.26**	**0.00**	**74.26**	**74.26**	**19.84**	**0.00**	**1.32**	**1.80**	**0.00**	**1.35**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.8460	7.8460	3.2000e-004	7.0000e-005	7.8741
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.8460	7.8460	3.2000e-004	7.0000e-005	7.8741
NaturalGas Mitigated	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246
NaturalGas Unmitigated	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	82423.8	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246
Total		**4.4000e-004**	**3.8000e-003**	**1.6200e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.3985**	**4.3985**	**8.0000e-005**	**8.0000e-005**	**4.4246**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	82423.8	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246
Total		**4.4000e-004**	**3.8000e-003**	**1.6200e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.3985**	**4.3985**	**8.0000e-005**	**8.0000e-005**	**4.4246**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	24624.9	7.8460	3.2000e-004	7.0000e-005	7.8741
Total		**7.8460**	**3.2000e-004**	**7.0000e-005**	**7.8741**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	24624.9	7.8460	3.2000e-004	7.0000e-005	7.8741
Total		**7.8460**	**3.2000e-004**	**7.0000e-005**	**7.8741**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0222	8.9000e-004	0.0314	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.6629	0.6629	6.0000e-005	1.0000e-005	0.6678
Unmitigated	0.0232	1.0400e-003	0.0406	3.0000e-005		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.2008	0.6629	0.8637	1.0000e-003	1.0000e-005	0.8920

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0700e-003	6.8000e-004	9.4200e-003	3.0000e-005		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.2008	0.6124	0.8131	9.5000e-004	1.0000e-005	0.8402
Landscaping	9.6000e-004	3.6000e-004	0.0312	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0505	0.0505	5.0000e-005	0.0000	0.0518
Total	**0.0232**	**1.0400e-003**	**0.0406**	**3.0000e-005**		**1.7100e-003**	**1.7100e-003**		**1.7100e-003**	**1.7100e-003**	**0.2008**	**0.6629**	**0.8637**	**1.0000e-003**	**1.0000e-005**	**0.8920**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.0000e-005	5.3000e-004	2.3000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6124	0.6124	1.0000e-005	1.0000e-005	0.6160
Landscaping	9.6000e-004	3.6000e-004	0.0312	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0505	0.0505	5.0000e-005	0.0000	0.0518
Total	**0.0222**	**8.9000e-004**	**0.0314**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.6629**	**0.6629**	**6.0000e-005**	**1.0000e-005**	**0.6678**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.3091	6.4200e-003	1.6000e-004	1.5177
Unmitigated	1.3091	6.4200e-003	1.6000e-004	1.5177

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.195462 / 0.123226	1.3091	6.4200e-003	1.6000e-004	1.5177
Total		**1.3091**	**6.4200e-003**	**1.6000e-004**	**1.5177**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.195462 / 0.123226	1.3091	6.4200e-003	1.6000e-004	1.5177
Total		**1.3091**	**6.4200e-003**	**1.6000e-004**	**1.5177**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7490	0.0443	0.0000	1.8557
Unmitigated	0.7490	0.0443	0.0000	1.8557

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	3.69	0.7490	0.0443	0.0000	1.8557
Total		**0.7490**	**0.0443**	**0.0000**	**1.8557**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	3.69	0.7490	0.0443	0.0000	1.8557
Total		**0.7490**	**0.0443**	**0.0000**	**1.8557**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Single Family Residential

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	9

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2098	0.0572	1.0026	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5517
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2122**	**0.0780**	**1.0114**	**2.8100e-003**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.1264**	**0.1264**	**17.7049**	**81.0126**	**98.7175**	**0.0848**	**1.4800e-003**	**101.2764**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1288	0.0452	0.2673	2.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	54.4457	54.4457	1.4800e-003	9.9000e-004	54.7776
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1313**	**0.0660**	**0.2761**	**4.1000e-004**	**0.0000**	**6.4600e-003**	**6.4600e-003**	**0.0000**	**6.4600e-003**	**6.4600e-003**	**0.0000**	**81.0126**	**81.0126**	**1.9900e-003**	**1.4800e-003**	**81.5024**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**38.15**	**15.38**	**72.70**	**85.41**	**0.00**	**94.89**	**94.89**	**0.00**	**94.89**	**94.89**	**100.00**	**0.00**	**17.93**	**97.65**	**0.00**	**19.52**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
NaturalGas Unmitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	225.819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.225819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1288	0.0452	0.2673	2.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	54.4457	54.4457	1.4800e-003	9.9000e-004	54.7776
Unmitigated	0.2098	0.0572	1.0026	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5517

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0859	0.0543	0.7533	2.6700e-003		0.1234	0.1234		0.1234	0.1234	17.7049	54.0000	71.7049	0.0838	9.9000e-004	74.0950
Landscaping	7.6800e-003	2.8900e-003	0.2493	1.0000e-005		1.3600e-003	1.3600e-003		1.3600e-003	1.3600e-003		0.4457	0.4457	4.4000e-004		0.4567
Total	**0.2098**	**0.0572**	**1.0026**	**2.6800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**17.7049**	**54.4457**	**72.1506**	**0.0842**	**9.9000e-004**	**74.5517**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.9500e-003	0.0423	0.0180	2.7000e-004		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	54.0000	54.0000	1.0300e-003	9.9000e-004	54.3209
Landscaping	7.6800e-003	2.8900e-003	0.2493	1.0000e-005		1.3600e-003	1.3600e-003		1.3600e-003	1.3600e-003		0.4457	0.4457	4.4000e-004		0.4567
Total	**0.1288**	**0.0452**	**0.2673**	**2.8000e-004**		**4.7800e-003**	**4.7800e-003**		**4.7800e-003**	**4.7800e-003**	**0.0000**	**54.4457**	**54.4457**	**1.4700e-003**	**9.9000e-004**	**54.7776**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Single Family Residential

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	9

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2098	0.0572	1.0026	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5517
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2122**	**0.0780**	**1.0114**	**2.8100e-003**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.1264**	**0.1264**	**17.7049**	**81.0126**	**98.7175**	**0.0848**	**1.4800e-003**	**101.2764**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1288	0.0452	0.2673	2.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	54.4457	54.4457	1.4800e-003	9.9000e-004	54.7776
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1313**	**0.0660**	**0.2761**	**4.1000e-004**	**0.0000**	**6.4600e-003**	**6.4600e-003**	**0.0000**	**6.4600e-003**	**6.4600e-003**	**0.0000**	**81.0126**	**81.0126**	**1.9900e-003**	**1.4800e-003**	**81.5024**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**38.15**	**15.38**	**72.70**	**85.41**	**0.00**	**94.89**	**94.89**	**0.00**	**94.89**	**94.89**	**100.00**	**0.00**	**17.93**	**97.65**	**0.00**	**19.52**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
NaturalGas Unmitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	225.819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.225819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1288	0.0452	0.2673	2.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	54.4457	54.4457	1.4800e-003	9.9000e-004	54.7776
Unmitigated	0.2098	0.0572	1.0026	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5517

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0859	0.0543	0.7533	2.6700e-003		0.1234	0.1234		0.1234	0.1234	17.7049	54.0000	71.7049	0.0838	9.9000e-004	74.0950
Landscaping	7.6800e-003	2.8900e-003	0.2493	1.0000e-005		1.3600e-003	1.3600e-003		1.3600e-003	1.3600e-003		0.4457	0.4457	4.4000e-004		0.4567
Total	**0.2098**	**0.0572**	**1.0026**	**2.6800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**17.7049**	**54.4457**	**72.1506**	**0.0842**	**9.9000e-004**	**74.5517**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.9500e-003	0.0423	0.0180	2.7000e-004		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	54.0000	54.0000	1.0300e-003	9.9000e-004	54.3209
Landscaping	7.6800e-003	2.8900e-003	0.2493	1.0000e-005		1.3600e-003	1.3600e-003		1.3600e-003	1.3600e-003		0.4457	0.4457	4.4000e-004		0.4567
Total	**0.1288**	**0.0452**	**0.2673**	**2.8000e-004**		**4.7800e-003**	**4.7800e-003**		**4.7800e-003**	**4.7800e-003**	**0.0000**	**54.4457**	**54.4457**	**1.4700e-003**	**9.9000e-004**	**54.7776**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Low Rise Apts

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emissions, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0737	5.5500e-003	0.2164	1.9000e-004		9.1300e-003	9.1300e-003		9.1300e-003	9.1300e-003	1.0708	3.5354	4.6062	5.3400e-003	6.0000e-005	4.7574
Energy	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	35.5685	35.5685	1.1600e-003	4.4000e-004	35.7287
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	6.6514	6.9821	0.0342	8.6000e-004	8.0941
Total	**0.0751**	**0.0176**	**0.2215**	**2.7000e-004**	**0.0000**	**0.0101**	**0.0101**	**0.0000**	**0.0101**	**0.0101**	**2.8955**	**45.7553**	**48.6508**	**0.1290**	**1.3600e-003**	**52.2816**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0683	4.7500e-003	0.1674	3.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	3.5354	3.5354	3.3000e-004	6.0000e-005	3.5615
Energy	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	35.5685	35.5685	1.1600e-003	4.4000e-004	35.7287
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	6.6514	6.9821	0.0342	8.6000e-004	8.0941
Total	**0.0697**	**0.0168**	**0.1725**	**1.1000e-004**	**0.0000**	**2.1000e-003**	**2.1000e-003**	**0.0000**	**2.1000e-003**	**2.1000e-003**	**1.8247**	**45.7553**	**47.5800**	**0.1240**	**1.3600e-003**	**51.0857**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**7.19**	**4.55**	**22.13**	**59.26**	**0.00**	**79.21**	**79.21**	**0.00**	**79.21**	**79.21**	**36.98**	**0.00**	**2.20**	**3.88**	**0.00**	**2.29**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21.6173	21.6173	8.9000e-004	1.8000e-004	21.6946
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21.6173	21.6173	8.9000e-004	1.8000e-004	21.6946
NaturalGas Mitigated	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341
NaturalGas Unmitigated	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	261436	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341
Total		**1.4100e-003**	**0.0121**	**5.1300e-003**	**8.0000e-005**		**9.7000e-004**	**9.7000e-004**		**9.7000e-004**	**9.7000e-004**	**0.0000**	**13.9512**	**13.9512**	**2.7000e-004**	**2.6000e-004**	**14.0341**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	261436	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341
Total		**1.4100e-003**	**0.0121**	**5.1300e-003**	**8.0000e-005**		**9.7000e-004**	**9.7000e-004**		**9.7000e-004**	**9.7000e-004**	**0.0000**	**13.9512**	**13.9512**	**2.7000e-004**	**2.6000e-004**	**14.0341**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	67846.2	21.6173	8.9000e-004	1.8000e-004	21.6946
Total		**21.6173**	**8.9000e-004**	**1.8000e-004**	**21.6946**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	67846.2	21.6173	8.9000e-004	1.8000e-004	21.6946
Total		**21.6173**	**8.9000e-004**	**1.8000e-004**	**21.6946**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0683	4.7500e-003	0.1674	3.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	3.5354	3.5354	3.3000e-004	6.0000e-005	3.5615
Unmitigated	0.0737	5.5500e-003	0.2164	1.9000e-004		9.1300e-003	9.1300e-003		9.1300e-003	9.1300e-003	1.0708	3.5354	4.6062	5.3400e-003	6.0000e-005	4.7574

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.7300e-003	3.6200e-003	0.0502	1.8000e-004		8.2200e-003	8.2200e-003		8.2200e-003	8.2200e-003	1.0708	3.2659	4.3366	5.0700e-003	6.0000e-005	4.4812
Landscaping	5.1200e-003	1.9300e-003	0.1662	1.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	0.2695	0.2695	2.7000e-004	0.0000	0.2762
Total	**0.0737**	**5.5500e-003**	**0.2164**	**1.9000e-004**		**9.1300e-003**	**9.1300e-003**		**9.1300e-003**	**9.1300e-003**	**1.0708**	**3.5354**	**4.6062**	**5.3400e-003**	**6.0000e-005**	**4.7574**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.3000e-004	2.8200e-003	1.2000e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.2659	3.2659	6.0000e-005	6.0000e-005	3.2853
Landscaping	5.1200e-003	1.9300e-003	0.1662	1.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	0.2695	0.2695	2.7000e-004	0.0000	0.2762
Total	**0.0683**	**4.7500e-003**	**0.1674**	**3.0000e-005**		**1.1400e-003**	**1.1400e-003**		**1.1400e-003**	**1.1400e-003**	**0.0000**	**3.5354**	**3.5354**	**3.3000e-004**	**6.0000e-005**	**3.5615**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.9821	0.0342	8.6000e-004	8.0941
Unmitigated	6.9821	0.0342	8.6000e-004	8.0941

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.04246 / 0.657206	6.9821	0.0342	8.6000e-004	8.0941
Total		**6.9821**	**0.0342**	**8.6000e-004**	**8.0941**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.04246 / 0.657206	6.9821	0.0342	8.6000e-004	8.0941
Total		**6.9821**	**0.0342**	**8.6000e-004**	**8.0941**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.4940	0.0883	0.0000	3.7014
Unmitigated	1.4940	0.0883	0.0000	3.7014

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Low Rise Apts

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emissions, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8512**	**0.3710**	**5.3751**	**0.0147**	**0.0000**	**0.6706**	**0.6706**	**0.0000**	**0.6706**	**0.6706**	**94.4262**	**374.6432**	**469.0694**	**0.4509**	**6.8200e-003**	**482.3761**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4193**	**0.3070**	**1.4535**	**1.9300e-003**	**0.0000**	**0.0308**	**0.0308**	**0.0000**	**0.0308**	**0.0308**	**0.0000**	**374.6432**	**374.6432**	**9.5000e-003**	**6.8200e-003**	**376.9143**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.73**	**17.24**	**72.96**	**86.89**	**0.00**	**95.40**	**95.40**	**0.00**	**95.40**	**95.40**	**100.00**	**0.00**	**20.13**	**97.89**	**0.00**	**21.86**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
NaturalGas Unmitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	716.264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.716264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Unmitigated	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.8434**	**0.3050**	**5.3470**	**0.0143**		**0.6652**	**0.6652**		**0.6652**	**0.6652**	**94.4262**	**290.3768**	**384.8031**	**0.4493**	**5.2800e-003**	**397.6090**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.4116**	**0.2410**	**1.4254**	**1.5100e-003**		**0.0255**	**0.0255**		**0.0255**	**0.0255**	**0.0000**	**290.3768**	**290.3768**	**7.8800e-003**	**5.2800e-003**	**292.1472**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Low Rise Apts

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emissions, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8512**	**0.3710**	**5.3751**	**0.0147**	**0.0000**	**0.6706**	**0.6706**	**0.0000**	**0.6706**	**0.6706**	**94.4262**	**374.6432**	**469.0694**	**0.4509**	**6.8200e-003**	**482.3761**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4193**	**0.3070**	**1.4535**	**1.9300e-003**	**0.0000**	**0.0308**	**0.0308**	**0.0000**	**0.0308**	**0.0308**	**0.0000**	**374.6432**	**374.6432**	**9.5000e-003**	**6.8200e-003**	**376.9143**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.73**	**17.24**	**72.96**	**86.89**	**0.00**	**95.40**	**95.40**	**0.00**	**95.40**	**95.40**	**100.00**	**0.00**	**20.13**	**97.89**	**0.00**	**21.86**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
NaturalGas Unmitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	716.264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.716264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Unmitigated	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.8434**	**0.3050**	**5.3470**	**0.0143**		**0.6652**	**0.6652**		**0.6652**	**0.6652**	**94.4262**	**290.3768**	**384.8031**	**0.4493**	**5.2800e-003**	**397.6090**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.4116**	**0.2410**	**1.4254**	**1.5100e-003**		**0.0255**	**0.0255**		**0.0255**	**0.0255**	**0.0000**	**290.3768**	**290.3768**	**7.8800e-003**	**5.2800e-003**	**292.1472**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Mid Rise Apts

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	38.00	Dwelling Unit	1.00	38,000.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - no construction worker trips

On-road Fugitive Dust - No construction dust emissions

Vehicle Trips - No CalEEMod vehicle emission analysis, use separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	1.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	1.90	0.00
tblWoodstoves	NumberNoncatalytic	1.90	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1622	0.0113	0.3975	6.0000e-005		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.3966	8.3966	7.8000e-004	1.4000e-004	8.4585
Energy	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	76.1788	76.1788	2.5400e-003	9.2000e-004	76.5155
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.5483	0.0000	3.5483	0.2097	0.0000	8.7907
Water						0.0000	0.0000		0.0000	0.0000	0.7855	15.7970	16.5825	0.0813	2.0400e-003	19.2236
Total	**0.1649**	**0.0347**	**0.4075**	**2.1000e-004**	**0.0000**	**4.6000e-003**	**4.6000e-003**	**0.0000**	**4.6000e-003**	**4.6000e-003**	**4.3338**	**100.3723**	**104.7061**	**0.2944**	**3.1000e-003**	**112.9883**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1622	0.0113	0.3975	6.0000e-005		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.3966	8.3966	7.8000e-004	1.4000e-004	8.4585
Energy	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	76.1788	76.1788	2.5400e-003	9.2000e-004	76.5155
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.5483	0.0000	3.5483	0.2097	0.0000	8.7907
Water						0.0000	0.0000		0.0000	0.0000	0.7855	15.7970	16.5825	0.0813	2.0400e-003	19.2236
Total	**0.1649**	**0.0347**	**0.4075**	**2.1000e-004**	**0.0000**	**4.6000e-003**	**4.6000e-003**	**0.0000**	**4.6000e-003**	**4.6000e-003**	**4.3338**	**100.3723**	**104.7061**	**0.2944**	**3.1000e-003**	**112.9883**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	49.0137	49.0137	2.0200e-003	4.2000e-004	49.1890
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	49.0137	49.0137	2.0200e-003	4.2000e-004	49.1890
NaturalGas Mitigated	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265
NaturalGas Unmitigated	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	509054	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265
Total		**2.7400e-003**	**0.0235**	**9.9800e-003**	**1.5000e-004**		**1.9000e-003**	**1.9000e-003**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**27.1651**	**27.1651**	**5.2000e-004**	**5.0000e-004**	**27.3265**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	509054	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265
Total		**2.7400e-003**	**0.0235**	**9.9800e-003**	**1.5000e-004**		**1.9000e-003**	**1.9000e-003**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**27.1651**	**27.1651**	**5.2000e-004**	**5.0000e-004**	**27.3265**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	153830	49.0137	2.0200e-003	4.2000e-004	49.1890
Total		**49.0137**	**2.0200e-003**	**4.2000e-004**	**49.1890**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	153830	49.0137	2.0200e-003	4.2000e-004	49.1890
Total		**49.0137**	**2.0200e-003**	**4.2000e-004**	**49.1890**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1622	0.0113	0.3975	6.0000e-005		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.3966	8.3966	7.8000e-004	1.4000e-004	8.4585
Unmitigated	0.1622	0.0113	0.3975	6.0000e-005		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.3966	8.3966	7.8000e-004	1.4000e-004	8.4585

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.8000e-004	6.7000e-003	2.8500e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7564	7.7564	1.5000e-004	1.4000e-004	7.8025
Landscaping	0.0122	4.5800e-003	0.3947	2.0000e-005		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	0.6401	0.6401	6.3000e-004	0.0000	0.6560
Total	**0.1622**	**0.0113**	**0.3975**	**6.0000e-005**		**2.6900e-003**	**2.6900e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**8.3966**	**8.3966**	**7.8000e-004**	**1.4000e-004**	**8.4585**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.8000e-004	6.7000e-003	2.8500e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7564	7.7564	1.5000e-004	1.4000e-004	7.8025
Landscaping	0.0122	4.5800e-003	0.3947	2.0000e-005		2.1500e-003	2.1500e-003		2.1500e-003	2.1500e-003	0.0000	0.6401	0.6401	6.3000e-004	0.0000	0.6560
Total	**0.1622**	**0.0113**	**0.3975**	**6.0000e-005**		**2.6900e-003**	**2.6900e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**8.3966**	**8.3966**	**7.8000e-004**	**1.4000e-004**	**8.4585**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.5825	0.0813	2.0400e-003	19.2236
Unmitigated	16.5825	0.0813	2.0400e-003	19.2236

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.47585 / 1.56086	16.5825	0.0813	2.0400e-003	19.2236
Total		**16.5825**	**0.0813**	**2.0400e-003**	**19.2236**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.47585 / 1.56086	16.5825	0.0813	2.0400e-003	19.2236
Total		**16.5825**	**0.0813**	**2.0400e-003**	**19.2236**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.5483	0.2097	0.0000	8.7907
Unmitigated	3.5483	0.2097	0.0000	8.7907

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	17.48	3.5483	0.2097	0.0000	8.7907
Total		**3.5483**	**0.2097**	**0.0000**	**8.7907**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	17.48	3.5483	0.2097	0.0000	8.7907
Total		**3.5483**	**0.2097**	**0.0000**	**8.7907**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Mid Rise Apts

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	38.00	Dwelling Unit	1.00	38,000.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - no construction worker trips

On-road Fugitive Dust - No construction dust emissions

Vehicle Trips - No CalEEMod vehicle emission analysis, use separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	1.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	1.90	0.00
tblWoodstoves	NumberNoncatalytic	1.90	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9926**	**0.7010**	**3.4399**	**4.4100e-003**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**853.7238**	**853.7238**	**0.0218**	**0.0156**	**858.9034**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9926**	**0.7010**	**3.4399**	**4.4100e-003**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**853.7238**	**853.7238**	**0.0218**	**0.0156**	**858.9034**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
NaturalGas Unmitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1394.67	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.39467	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495
Unmitigated	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0973	0.0367	3.1572	1.7000e-004		0.0172	0.0172		0.0172	0.0172		5.6450	5.6450	5.5900e-003		5.7849
Total	**0.9776**	**0.5725**	**3.3852**	**3.5900e-003**		**0.0606**	**0.0606**		**0.0606**	**0.0606**	**0.0000**	**689.6450**	**689.6450**	**0.0187**	**0.0125**	**693.8495**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0973	0.0367	3.1572	1.7000e-004		0.0172	0.0172		0.0172	0.0172		5.6450	5.6450	5.5900e-003		5.7849
Total	**0.9776**	**0.5725**	**3.3852**	**3.5900e-003**		**0.0606**	**0.0606**		**0.0606**	**0.0606**	**0.0000**	**689.6450**	**689.6450**	**0.0187**	**0.0125**	**693.8495**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Mid Rise Apts

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	38.00	Dwelling Unit	1.00	38,000.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - no construction worker trips

On-road Fugitive Dust - No construction dust emissions

Vehicle Trips - No CalEEMod vehicle emission analysis, use separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	1.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	1.90	0.00
tblWoodstoves	NumberNoncatalytic	1.90	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9926**	**0.7010**	**3.4399**	**4.4100e-003**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**853.7238**	**853.7238**	**0.0218**	**0.0156**	**858.9034**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9926**	**0.7010**	**3.4399**	**4.4100e-003**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**0.0709**	**0.0709**	**0.0000**	**853.7238**	**853.7238**	**0.0218**	**0.0156**	**858.9034**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
NaturalGas Unmitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1394.67	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.39467	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495
Unmitigated	0.9776	0.5725	3.3852	3.5900e-003		0.0606	0.0606		0.0606	0.0606	0.0000	689.6450	689.6450	0.0187	0.0125	693.8495

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0973	0.0367	3.1572	1.7000e-004		0.0172	0.0172		0.0172	0.0172		5.6450	5.6450	5.5900e-003		5.7849
Total	**0.9776**	**0.5725**	**3.3852**	**3.5900e-003**		**0.0606**	**0.0606**		**0.0606**	**0.0606**	**0.0000**	**689.6450**	**689.6450**	**0.0187**	**0.0125**	**693.8495**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0973	0.0367	3.1572	1.7000e-004		0.0172	0.0172		0.0172	0.0172		5.6450	5.6450	5.5900e-003		5.7849
Total	**0.9776**	**0.5725**	**3.3852**	**3.5900e-003**		**0.0606**	**0.0606**		**0.0606**	**0.0606**	**0.0000**	**689.6450**	**689.6450**	**0.0187**	**0.0125**	**693.8495**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Condos/Townhouse

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Long Beach Land Use Elements - Condos/Townhouse - Los Angeles-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblVehicleTrips	ST_TR	5.67	0.00
tblVehicleTrips	SU_TR	4.84	0.00
tblVehicleTrips	WD_TR	5.81	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0737	5.5500e-003	0.2164	1.9000e-004		9.1300e-003	9.1300e-003		9.1300e-003	9.1300e-003	1.0708	3.5354	4.6062	5.3400e-003	6.0000e-005	4.7574
Energy	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	40.3590	40.3590	1.3400e-003	4.9000e-004	40.5381
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	6.6514	6.9821	0.0342	8.6000e-004	8.0941
Total	**0.0752**	**0.0182**	**0.2218**	**2.7000e-004**	**0.0000**	**0.0102**	**0.0102**	**0.0000**	**0.0102**	**0.0102**	**2.8955**	**50.5458**	**53.4413**	**0.1292**	**1.4100e-003**	**57.0910**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0683	4.7500e-003	0.1674	3.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	3.5354	3.5354	3.3000e-004	6.0000e-005	3.5615
Energy	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	40.3590	40.3590	1.3400e-003	4.9000e-004	40.5381
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	6.6514	6.9821	0.0342	8.6000e-004	8.0941
Total	**0.0698**	**0.0174**	**0.1728**	**1.1000e-004**	**0.0000**	**2.1500e-003**	**2.1500e-003**	**0.0000**	**2.1500e-003**	**2.1500e-003**	**1.8247**	**50.5458**	**52.3705**	**0.1242**	**1.4100e-003**	**55.8951**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**7.19**	**4.39**	**22.10**	**59.26**	**0.00**	**78.82**	**78.82**	**0.00**	**78.82**	**78.82**	**36.98**	**0.00**	**2.00**	**3.88**	**0.00**	**2.09**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25.6933	25.6933	1.0600e-003	2.2000e-004	25.7852
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25.6933	25.6933	1.0600e-003	2.2000e-004	25.7852
NaturalGas Mitigated	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529
NaturalGas Unmitigated	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	274825	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529
Total		**1.4800e-003**	**0.0127**	**5.3900e-003**	**8.0000e-005**		**1.0200e-003**	**1.0200e-003**		**1.0200e-003**	**1.0200e-003**	**0.0000**	**14.6657**	**14.6657**	**2.8000e-004**	**2.7000e-004**	**14.7529**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	274825	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529
Total		**1.4800e-003**	**0.0127**	**5.3900e-003**	**8.0000e-005**		**1.0200e-003**	**1.0200e-003**		**1.0200e-003**	**1.0200e-003**	**0.0000**	**14.6657**	**14.6657**	**2.8000e-004**	**2.7000e-004**	**14.7529**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	80639	25.6933	1.0600e-003	2.2000e-004	25.7852
Total		**25.6933**	**1.0600e-003**	**2.2000e-004**	**25.7852**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	80639	25.6933	1.0600e-003	2.2000e-004	25.7852
Total		**25.6933**	**1.0600e-003**	**2.2000e-004**	**25.7852**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0683	4.7500e-003	0.1674	3.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	3.5354	3.5354	3.3000e-004	6.0000e-005	3.5615
Unmitigated	0.0737	5.5500e-003	0.2164	1.9000e-004		9.1300e-003	9.1300e-003		9.1300e-003	9.1300e-003	1.0708	3.5354	4.6062	5.3400e-003	6.0000e-005	4.7574

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.7300e-003	3.6200e-003	0.0502	1.8000e-004		8.2200e-003	8.2200e-003		8.2200e-003	8.2200e-003	1.0708	3.2659	4.3366	5.0700e-003	6.0000e-005	4.4812
Landscaping	5.1200e-003	1.9300e-003	0.1662	1.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	0.2695	0.2695	2.7000e-004	0.0000	0.2762
Total	**0.0737**	**5.5500e-003**	**0.2164**	**1.9000e-004**		**9.1300e-003**	**9.1300e-003**		**9.1300e-003**	**9.1300e-003**	**1.0708**	**3.5354**	**4.6062**	**5.3400e-003**	**6.0000e-005**	**4.7574**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.3000e-004	2.8200e-003	1.2000e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.2659	3.2659	6.0000e-005	6.0000e-005	3.2853
Landscaping	5.1200e-003	1.9300e-003	0.1662	1.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	0.2695	0.2695	2.7000e-004	0.0000	0.2762
Total	**0.0683**	**4.7500e-003**	**0.1674**	**3.0000e-005**		**1.1400e-003**	**1.1400e-003**		**1.1400e-003**	**1.1400e-003**	**0.0000**	**3.5354**	**3.5354**	**3.3000e-004**	**6.0000e-005**	**3.5615**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.9821	0.0342	8.6000e-004	8.0941
Unmitigated	6.9821	0.0342	8.6000e-004	8.0941

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.04246 / 0.657206	6.9821	0.0342	8.6000e-004	8.0941
Total		**6.9821**	**0.0342**	**8.6000e-004**	**8.0941**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.04246 / 0.657206	6.9821	0.0342	8.6000e-004	8.0941
Total		**6.9821**	**0.0342**	**8.6000e-004**	**8.0941**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.4940	0.0883	0.0000	3.7014
Unmitigated	1.4940	0.0883	0.0000	3.7014

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Condos/Townhouse

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Long Beach Land Use Elements - Condos/Townhouse - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblVehicleTrips	ST_TR	5.67	0.00
tblVehicleTrips	SU_TR	4.84	0.00
tblVehicleTrips	WD_TR	5.81	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	8.3000e-004	0.0000	0.0000	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.3000e-004**	**0.0000**	**0.0000**	**7.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	8.3000e-004	0.0000	0.0000	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.3000e-004**	**0.0000**	**0.0000**	**7.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8516**	**0.3744**	**5.3765**	**0.0147**	**0.0000**	**0.6709**	**0.6709**	**0.0000**	**0.6709**	**0.6709**	**94.4262**	**378.9586**	**473.3848**	**0.4510**	**6.9000e-003**	**486.7171**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4197**	**0.3104**	**1.4549**	**1.9500e-003**	**0.0000**	**0.0311**	**0.0311**	**0.0000**	**0.0311**	**0.0311**	**0.0000**	**378.9586**	**378.9586**	**9.5800e-003**	**6.9000e-003**	**381.2553**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.71**	**17.09**	**72.94**	**86.77**	**0.00**	**95.36**	**95.36**	**0.00**	**95.36**	**95.36**	**100.00**	**0.00**	**19.95**	**97.88**	**0.00**	**21.67**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
NaturalGas Unmitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	752.945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0.752945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Unmitigated	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.8434**	**0.3050**	**5.3470**	**0.0143**		**0.6652**	**0.6652**		**0.6652**	**0.6652**	**94.4262**	**290.3768**	**384.8031**	**0.4493**	**5.2800e-003**	**397.6090**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.4116**	**0.2410**	**1.4254**	**1.5100e-003**		**0.0255**	**0.0255**		**0.0255**	**0.0255**	**0.0000**	**290.3768**	**290.3768**	**7.8800e-003**	**5.2800e-003**	**292.1472**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Condos/Townhouse

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Long Beach Land Use Elements - Condos/Townhouse - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblVehicleTrips	ST_TR	5.67	0.00
tblVehicleTrips	SU_TR	4.84	0.00
tblVehicleTrips	WD_TR	5.81	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	8.3000e-004	0.0000	0.0000	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.3000e-004**	**0.0000**	**0.0000**	**7.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	8.3000e-004	0.0000	0.0000	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.3000e-004**	**0.0000**	**0.0000**	**7.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8516**	**0.3744**	**5.3765**	**0.0147**	**0.0000**	**0.6709**	**0.6709**	**0.0000**	**0.6709**	**0.6709**	**94.4262**	**378.9586**	**473.3848**	**0.4510**	**6.9000e-003**	**486.7171**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4197**	**0.3104**	**1.4549**	**1.9500e-003**	**0.0000**	**0.0311**	**0.0311**	**0.0000**	**0.0311**	**0.0311**	**0.0000**	**378.9586**	**378.9586**	**9.5800e-003**	**6.9000e-003**	**381.2553**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.71**	**17.09**	**72.94**	**86.77**	**0.00**	**95.36**	**95.36**	**0.00**	**95.36**	**95.36**	**100.00**	**0.00**	**19.95**	**97.88**	**0.00**	**21.67**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
NaturalGas Unmitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	752.945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0.752945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4116	0.2410	1.4254	1.5100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	290.3768	290.3768	7.8800e-003	5.2800e-003	292.1472
Unmitigated	0.8434	0.3050	5.3470	0.0143		0.6652	0.6652		0.6652	0.6652	94.4262	290.3768	384.8031	0.4493	5.2800e-003	397.6090

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.8434**	**0.3050**	**5.3470**	**0.0143**		**0.6652**	**0.6652**		**0.6652**	**0.6652**	**94.4262**	**290.3768**	**384.8031**	**0.4493**	**5.2800e-003**	**397.6090**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0410	0.0154	1.3294	7.0000e-005		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		2.3768	2.3768	2.3600e-003		2.4357
Total	**0.4116**	**0.2410**	**1.4254**	**1.5100e-003**		**0.0255**	**0.0255**		**0.0255**	**0.0255**	**0.0000**	**290.3768**	**290.3768**	**7.8800e-003**	**5.2800e-003**	**292.1472**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - City Park

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emissions, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.2177	4.2177	1.7000e-004	4.0000e-005	4.2328
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0183**	**4.2177**	**4.2360**	**1.2500e-003**	**4.0000e-005**	**4.2781**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.2177	4.2177	1.7000e-004	4.0000e-005	4.2328
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0183**	**4.2177**	**4.2360**	**1.2500e-003**	**4.0000e-005**	**4.2781**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.2177	1.7000e-004	4.0000e-005	4.2328
Unmitigated	4.2177	1.7000e-004	4.0000e-005	4.2328

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	4.2177	1.7000e-004	4.0000e-005	4.2328
Total		**4.2177**	**1.7000e-004**	**4.0000e-005**	**4.2328**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	4.2177	1.7000e-004	4.0000e-005	4.2328
Total		**4.2177**	**1.7000e-004**	**4.0000e-005**	**4.2328**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - City Park

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emissions, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - City Park

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction trip

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emissions, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	WD_TR	1.89	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Golf Course

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Golf Course	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	5.82	0.00
tblVehicleTrips	SU_TR	5.88	0.00
tblVehicleTrips	WD_TR	5.04	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.1888	0.0000	0.1888	0.0112	0.0000	0.4677
Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.2177	4.2177	1.7000e-004	4.0000e-005	4.2328
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1888**	**4.2177**	**4.4065**	**0.0113**	**4.0000e-005**	**4.7005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.1888	0.0000	0.1888	0.0112	0.0000	0.4677
Water						0.0000	0.0000		0.0000	0.0000	0.0000	4.2177	4.2177	1.7000e-004	4.0000e-005	4.2328
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1888**	**4.2177**	**4.4065**	**0.0113**	**4.0000e-005**	**4.7005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.2177	1.7000e-004	4.0000e-005	4.2328
Unmitigated	4.2177	1.7000e-004	4.0000e-005	4.2328

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 1.19148	4.2177	1.7000e-004	4.0000e-005	4.2328
Total		**4.2177**	**1.7000e-004**	**4.0000e-005**	**4.2328**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 1.19148	4.2177	1.7000e-004	4.0000e-005	4.2328
Total		**4.2177**	**1.7000e-004**	**4.0000e-005**	**4.2328**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1888	0.0112	0.0000	0.4677
Unmitigated	0.1888	0.0112	0.0000	0.4677

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	0.93	0.1888	0.0112	0.0000	0.4677
Total		**0.1888**	**0.0112**	**0.0000**	**0.4677**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	0.93	0.1888	0.0112	0.0000	0.4677
Total		**0.1888**	**0.0112**	**0.0000**	**0.4677**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Golf Course

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Golf Course	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	5.82	0.00
tblVehicleTrips	SU_TR	5.88	0.00
tblVehicleTrips	WD_TR	5.04	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Golf Course

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Golf Course	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	5.82	0.00
tblVehicleTrips	SU_TR	5.88	0.00
tblVehicleTrips	WD_TR	5.04	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Light Industrial

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	41.7916	44.9874	0.3300	8.1100e-003	55.6524
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**237.9252**	**252.0845**	**0.9851**	**0.0102**	**279.7490**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	41.7916	44.9874	0.3300	8.1100e-003	55.6524
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**237.9252**	**252.0845**	**0.9851**	**0.0102**	**279.7490**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	44.9874	0.3300	8.1100e-003	55.6524
Unmitigated	44.9874	0.3300	8.1100e-003	55.6524

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	10.0733 / 0	44.9874	0.3300	8.1100e-003	55.6524
Total		**44.9874**	**0.3300**	**8.1100e-003**	**55.6524**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	10.0733 / 0	44.9874	0.3300	8.1100e-003	55.6524
Total		**44.9874**	**0.3300**	**8.1100e-003**	**55.6524**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Light Industrial

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Light Industrial

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Junior College

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	11.23	0.00
tblVehicleTrips	SU_TR	1.21	0.00
tblVehicleTrips	WD_TR	27.49	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	202.0173	202.0173	6.9500e-003	2.3400e-003	202.8889
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	11.4954	0.0000	11.4954	0.6794	0.0000	28.4793
Water						0.0000	0.0000		0.0000	0.0000	0.6778	20.6938	21.3717	0.0705	1.8200e-003	23.6761
Total	**0.1840**	**0.0578**	**0.0491**	**3.5000e-004**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**12.1732**	**222.7122**	**234.8854**	**0.7568**	**4.1600e-003**	**255.0454**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	202.0173	202.0173	6.9500e-003	2.3400e-003	202.8889
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	11.4954	0.0000	11.4954	0.6794	0.0000	28.4793
Water						0.0000	0.0000		0.0000	0.0000	0.6778	20.6938	21.3717	0.0705	1.8200e-003	23.6761
Total	**0.1840**	**0.0578**	**0.0491**	**3.5000e-004**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**12.1732**	**222.7122**	**234.8854**	**0.7568**	**4.1600e-003**	**255.0454**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	139.0691	139.0691	5.7400e-003	1.1900e-003	139.5666
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	139.0691	139.0691	5.7400e-003	1.1900e-003	139.5666
NaturalGas Mitigated	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223
NaturalGas Unmitigated	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Junior College (2Yr)	1.1796e+006	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223
Total		**6.3600e-003**	**0.0578**	**0.0486**	**3.5000e-004**		**4.3900e-003**	**4.3900e-003**		**4.3900e-003**	**4.3900e-003**	**0.0000**	**62.9482**	**62.9482**	**1.2100e-003**	**1.1500e-003**	**63.3223**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Junior College (2Yr)	1.1796e+006	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223
Total		**6.3600e-003**	**0.0578**	**0.0486**	**3.5000e-004**		**4.3900e-003**	**4.3900e-003**		**4.3900e-003**	**4.3900e-003**	**0.0000**	**62.9482**	**62.9482**	**1.2100e-003**	**1.1500e-003**	**63.3223**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior College (2Yr)	436471	139.0691	5.7400e-003	1.1900e-003	139.5666
Total		**139.0691**	**5.7400e-003**	**1.1900e-003**	**139.5666**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior College (2Yr)	436471	139.0691	5.7400e-003	1.1900e-003	139.5666
Total		**139.0691**	**5.7400e-003**	**1.1900e-003**	**139.5666**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	21.3717	0.0705	1.8200e-003	23.6761
Unmitigated	21.3717	0.0705	1.8200e-003	23.6761

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior College (2Yr)	2.13658 / 3.34182	21.3717	0.0705	1.8200e-003	23.6761
Total		**21.3717**	**0.0705**	**1.8200e-003**	**23.6761**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior College (2Yr)	2.13658 / 3.34182	21.3717	0.0705	1.8200e-003	23.6761
Total		**21.3717**	**0.0705**	**1.8200e-003**	**23.6761**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.4954	0.6794	0.0000	28.4793
Unmitigated	11.4954	0.6794	0.0000	28.4793

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior College (2Yr)	56.63	11.4954	0.6794	0.0000	28.4793
Total		**11.4954**	**0.6794**	**0.0000**	**28.4793**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior College (2Yr)	56.63	11.4954	0.6794	0.0000	28.4793
Total		**11.4954**	**0.6794**	**0.0000**	**28.4793**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Junior College

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	11.23	0.00
tblVehicleTrips	SU_TR	1.21	0.00
tblVehicleTrips	WD_TR	27.49	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2707**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3200e-003**	**6.9700e-003**	**382.4807**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2707**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3200e-003**	**6.9700e-003**	**382.4807**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
NaturalGas Unmitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3231.79	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3.23179	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Junior College

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	11.23	0.00
tblVehicleTrips	SU_TR	1.21	0.00
tblVehicleTrips	WD_TR	27.49	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2707**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3200e-003**	**6.9700e-003**	**382.4807**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2707**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3200e-003**	**6.9700e-003**	**382.4807**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
NaturalGas Unmitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3231.79	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3.23179	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Library

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.1440	0.0000	8.1440	0.4813	0.0000	20.1764
Water						0.0000	0.0000		0.0000	0.0000	0.4324	13.2008	13.6332	0.0450	1.1600e-003	15.1032
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**8.5764**	**209.3344**	**217.9108**	**0.5334**	**3.2500e-003**	**232.2145**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.1440	0.0000	8.1440	0.4813	0.0000	20.1764
Water						0.0000	0.0000		0.0000	0.0000	0.4324	13.2008	13.6332	0.0450	1.1600e-003	15.1032
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**8.5764**	**209.3344**	**217.9108**	**0.5334**	**3.2500e-003**	**232.2145**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Library	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Library	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	13.6332	0.0450	1.1600e-003	15.1032
Unmitigated	13.6332	0.0450	1.1600e-003	15.1032

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	1.36294 / 2.13179	13.6332	0.0450	1.1600e-003	15.1032
Total		**13.6332**	**0.0450**	**1.1600e-003**	**15.1032**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	1.36294 / 2.13179	13.6332	0.0450	1.1600e-003	15.1032
Total		**13.6332**	**0.0450**	**1.1600e-003**	**15.1032**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.1440	0.4813	0.0000	20.1764
Unmitigated	8.1440	0.4813	0.0000	20.1764

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	40.12	8.1440	0.4813	0.0000	20.1764
Total		**8.1440**	**0.4813**	**0.0000**	**20.1764**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	40.12	8.1440	0.4813	0.0000	20.1764
Total		**8.1440**	**0.4813**	**0.0000**	**20.1764**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Library

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Library

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Long Beach Land Use Elements - Library - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Manufacturing

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	3.82	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	41.7916	44.9874	0.3300	8.1100e-003	55.6524
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**237.9252**	**252.0845**	**0.9851**	**0.0102**	**279.7490**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	41.7916	44.9874	0.3300	8.1100e-003	55.6524
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**237.9252**	**252.0845**	**0.9851**	**0.0102**	**279.7490**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Manufacturing	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Manufacturing	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	44.9874	0.3300	8.1100e-003	55.6524
Unmitigated	44.9874	0.3300	8.1100e-003	55.6524

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	10.0733 / 0	44.9874	0.3300	8.1100e-003	55.6524
Total		**44.9874**	**0.3300**	**8.1100e-003**	**55.6524**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	10.0733 / 0	44.9874	0.3300	8.1100e-003	55.6524
Total		**44.9874**	**0.3300**	**8.1100e-003**	**55.6524**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Manufacturing

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Long Beach Land Use Elements - Manufacturing - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	3.82	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Manufacturing

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	3.82	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Convenience Market

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market (24 Hour)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	WD_TR	737.99	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5736	0.0000	26.5736	1.5705	0.0000	65.8348
Water						0.0000	0.0000		0.0000	0.0000	1.0237	20.3869	21.4105	0.1060	2.6600e-003	24.8517
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5972**	**211.5687**	**239.1659**	**1.6842**	**4.3300e-003**	**282.5614**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5736	0.0000	26.5736	1.5705	0.0000	65.8348
Water						0.0000	0.0000		0.0000	0.0000	1.0237	20.3869	21.4105	0.1060	2.6600e-003	24.8517
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5972**	**211.5687**	**239.1659**	**1.6842**	**4.3300e-003**	**282.5614**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 Hour)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 Hour)	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 Hour)	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 Hour)	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 Hour)	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	21.4105	0.1060	2.6600e-003	24.8517
Unmitigated	21.4105	0.1060	2.6600e-003	24.8517

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 Hour)	3.2266 / 1.97759	21.4105	0.1060	2.6600e-003	24.8517
Total		**21.4105**	**0.1060**	**2.6600e-003**	**24.8517**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 Hour)	3.2266 / 1.97759	21.4105	0.1060	2.6600e-003	24.8517
Total		**21.4105**	**0.1060**	**2.6600e-003**	**24.8517**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.5736	1.5705	0.0000	65.8348
Unmitigated	26.5736	1.5705	0.0000	65.8348

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 Hour)	130.91	26.5736	1.5705	0.0000	65.8348
Total		**26.5736**	**1.5705**	**0.0000**	**65.8348**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 Hour)	130.91	26.5736	1.5705	0.0000	65.8348
Total		**26.5736**	**1.5705**	**0.0000**	**65.8348**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Convenience Market

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market (24 Hour)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	WD_TR	737.99	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 Hour)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Convenience Market

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market (24 Hour)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	WD_TR	737.99	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 Hour)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Medical_Office_Bldg

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Long Beach Land Use Elements - Medical_Office_Bldg - Los Angeles-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	204.4885	204.4885	7.9100e-003	1.9800e-003	205.2773
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	95.4971	0.0000	95.4971	5.6437	0.0000	236.5900
Water						0.0000	0.0000		0.0000	0.0000	1.7341	26.3624	28.0965	0.1792	4.4300e-003	33.8967
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**97.2312**	**230.8519**	**328.0831**	**5.8308**	**6.4100e-003**	**475.7652**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	204.4885	204.4885	7.9100e-003	1.9800e-003	205.2773
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	95.4971	0.0000	95.4971	5.6437	0.0000	236.5900
Water						0.0000	0.0000		0.0000	0.0000	1.7341	26.3624	28.0965	0.1792	4.4300e-003	33.8967
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**97.2312**	**230.8519**	**328.0831**	**5.8308**	**6.4100e-003**	**475.7652**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	180.2902	180.2902	7.4400e-003	1.5400e-003	180.9351
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	180.2902	180.2902	7.4400e-003	1.5400e-003	180.9351
NaturalGas Mitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
NaturalGas Unmitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	565844	180.2902	7.4400e-003	1.5400e-003	180.9351
Total		**180.2902**	**7.4400e-003**	**1.5400e-003**	**180.9351**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	565844	180.2902	7.4400e-003	1.5400e-003	180.9351
Total		**180.2902**	**7.4400e-003**	**1.5400e-003**	**180.9351**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	28.0965	0.1792	4.4300e-003	33.8967
Unmitigated	28.0965	0.1792	4.4300e-003	33.8967

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	5.46593 / 1.04113	28.0965	0.1792	4.4300e-003	33.8967
Total		**28.0965**	**0.1792**	**4.4300e-003**	**33.8967**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	5.46593 / 1.04113	28.0965	0.1792	4.4300e-003	33.8967
Total		**28.0965**	**0.1792**	**4.4300e-003**	**33.8967**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	95.4971	5.6437	0.0000	236.5900
Unmitigated	95.4971	5.6437	0.0000	236.5900

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	470.45	95.4971	5.6437	0.0000	236.5900
Total		**95.4971**	**5.6437**	**0.0000**	**236.5900**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	470.45	95.4971	5.6437	0.0000	236.5900
Total		**95.4971**	**5.6437**	**0.0000**	**236.5900**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Medical_Office_Bldg

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Medical_Office_Bldg

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Long Beach Land Use Elements - Medical_Office_Bldg - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Office Bldg

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No onstruction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	11.03	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	204.4885	204.4885	7.9100e-003	1.9800e-003	205.2773
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.2232	0.0000	8.2232	0.4860	0.0000	20.3725
Water						0.0000	0.0000		0.0000	0.0000	2.4562	48.9174	51.3736	0.2543	6.3700e-003	59.6306
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**10.6794**	**253.4069**	**264.0863**	**0.7482**	**8.3500e-003**	**285.2816**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	204.4885	204.4885	7.9100e-003	1.9800e-003	205.2773
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.2232	0.0000	8.2232	0.4860	0.0000	20.3725
Water						0.0000	0.0000		0.0000	0.0000	2.4562	48.9174	51.3736	0.2543	6.3700e-003	59.6306
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**10.6794**	**253.4069**	**264.0863**	**0.7482**	**8.3500e-003**	**285.2816**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	180.2902	180.2902	7.4400e-003	1.5400e-003	180.9351
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	180.2902	180.2902	7.4400e-003	1.5400e-003	180.9351
NaturalGas Mitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
NaturalGas Unmitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	565844	180.2902	7.4400e-003	1.5400e-003	180.9351
Total		**180.2902**	**7.4400e-003**	**1.5400e-003**	**180.9351**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	565844	180.2902	7.4400e-003	1.5400e-003	180.9351
Total		**180.2902**	**7.4400e-003**	**1.5400e-003**	**180.9351**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	51.3736	0.2543	6.3700e-003	59.6306
Unmitigated	51.3736	0.2543	6.3700e-003	59.6306

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	7.74208 / 4.74515	51.3736	0.2543	6.3700e-003	59.6306
Total		**51.3736**	**0.2543**	**6.3700e-003**	**59.6306**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	7.74208 / 4.74515	51.3736	0.2543	6.3700e-003	59.6306
Total		**51.3736**	**0.2543**	**6.3700e-003**	**59.6306**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.2232	0.4860	0.0000	20.3725
Unmitigated	8.2232	0.4860	0.0000	20.3725

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	40.51	8.2232	0.4860	0.0000	20.3725
Total		**8.2232**	**0.4860**	**0.0000**	**20.3725**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	40.51	8.2232	0.4860	0.0000	20.3725
Total		**8.2232**	**0.4860**	**0.0000**	**20.3725**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Office Bldg

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No onstruction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	11.03	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Office Bldg

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No onstruction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	11.03	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9870**	**0.1218**	**0.1068**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8300e-003**	**2.6800e-003**	**147.0382**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Pharmacy/Drugstore

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Pharmacy/Drugstore w/o Drive Thru	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	90.06	0.00
tblVehicleTrips	SU_TR	90.06	0.00
tblVehicleTrips	WD_TR	90.06	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5878	0.0000	26.5878	1.5713	0.0000	65.8700
Water						0.0000	0.0000		0.0000	0.0000	0.9736	19.3892	20.3627	0.1008	2.5300e-003	23.6355
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5613**	**210.5710**	**238.1323**	**1.6799**	**4.2000e-003**	**281.3804**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5878	0.0000	26.5878	1.5713	0.0000	65.8700
Water						0.0000	0.0000		0.0000	0.0000	0.9736	19.3892	20.3627	0.1008	2.5300e-003	23.6355
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5613**	**210.5710**	**238.1323**	**1.6799**	**4.2000e-003**	**281.3804**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Pharmacy/Drugstore w/o Drive Thru	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Pharmacy/Drugstore w/o Drive	16.60	8.40	6.90	7.40	73.60	19.00	41	6	53

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Pharmacy/Drugstore w/o Drive Thru	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Pharmacy/Drugstore w/o Drive Thru	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Pharmacy/Drugstore w/o Drive Thru	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.3627	0.1008	2.5300e-003	23.6355
Unmitigated	20.3627	0.1008	2.5300e-003	23.6355

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	3.06869 / 1.88081	20.3627	0.1008	2.5300e-003	23.6355
Total		**20.3627**	**0.1008**	**2.5300e-003**	**23.6355**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	3.06869 / 1.88081	20.3627	0.1008	2.5300e-003	23.6355
Total		**20.3627**	**0.1008**	**2.5300e-003**	**23.6355**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.5878	1.5713	0.0000	65.8700
Unmitigated	26.5878	1.5713	0.0000	65.8700

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	130.98	26.5878	1.5713	0.0000	65.8700
Total		**26.5878**	**1.5713**	**0.0000**	**65.8700**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	130.98	26.5878	1.5713	0.0000	65.8700
Total		**26.5878**	**1.5713**	**0.0000**	**65.8700**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Pharmacy/Drugstore

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Pharmacy/Drugstore w/o Drive Thru	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	90.06	0.00
tblVehicleTrips	SU_TR	90.06	0.00
tblVehicleTrips	WD_TR	90.06	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Pharmacy/Drugstore w/o Drive Thru	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Pharmacy/Drugstore w/o Drive	16.60	8.40	6.90	7.40	73.60	19.00	41	6	53

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Pharmacy/Drugstore w/o Drive Thru	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Pharmacy/Drugstore

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Pharmacy/Drugstore w/o Drive Thru	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	90.06	0.00
tblVehicleTrips	SU_TR	90.06	0.00
tblVehicleTrips	WD_TR	90.06	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Pharmacy/Drugstore w/o Drive Thru	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Pharmacy/Drugstore w/o Drive	16.60	8.40	6.90	7.40	73.60	19.00	41	6	53

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Pharmacy/Drugstore w/o Drive Thru	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - R&D

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.6719	0.0000	0.6719	0.0397	0.0000	1.6646
Water						0.0000	0.0000		0.0000	0.0000	6.7950	88.8591	95.6541	0.7016	0.0172	118.3306
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**7.4669**	**284.9927**	**292.4596**	**0.7485**	**0.0193**	**316.9301**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	196.1325	196.1325	7.1700e-003	2.0900e-003	196.9337
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.6719	0.0000	0.6719	0.0397	0.0000	1.6646
Water						0.0000	0.0000		0.0000	0.0000	6.7950	88.8591	95.6541	0.7016	0.0172	118.3306
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**7.4669**	**284.9927**	**292.4596**	**0.7485**	**0.0193**	**316.9301**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.0586	154.0586	6.3600e-003	1.3200e-003	154.6097
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Research & Development	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Research & Development	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	483516	154.0586	6.3600e-003	1.3200e-003	154.6097
Total		**154.0586**	**6.3600e-003**	**1.3200e-003**	**154.6097**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	95.6541	0.7016	0.0172	118.3306
Unmitigated	95.6541	0.7016	0.0172	118.3306

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	21.4182 / 0	95.6541	0.7016	0.0172	118.3306
Total		**95.6541**	**0.7016**	**0.0172**	**118.3306**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	21.4182 / 0	95.6541	0.7016	0.0172	118.3306
Total		**95.6541**	**0.7016**	**0.0172**	**118.3306**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.6719	0.0397	0.0000	1.6646
Unmitigated	0.6719	0.0397	0.0000	1.6646

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	3.31	0.6719	0.0397	0.0000	1.6646
Total		**0.6719**	**0.0397**	**0.0000**	**1.6646**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	3.31	0.6719	0.0397	0.0000	1.6646
Total		**0.6719**	**0.0397**	**0.0000**	**1.6646**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - R&D

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - R&D

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9969**	**0.2118**	**0.1824**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.9000e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Shopping Ctr

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	20.3869	21.4105	0.1060	2.6600e-003	24.8517
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**211.5687**	**221.8772**	**0.6625**	**4.3300e-003**	**239.7293**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	20.3869	21.4105	0.1060	2.6600e-003	24.8517
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**211.5687**	**221.8772**	**0.6625**	**4.3300e-003**	**239.7293**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	21.4105	0.1060	2.6600e-003	24.8517
Unmitigated	21.4105	0.1060	2.6600e-003	24.8517

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	3.2266 / 1.97759	21.4105	0.1060	2.6600e-003	24.8517
Total		**21.4105**	**0.1060**	**2.6600e-003**	**24.8517**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	3.2266 / 1.97759	21.4105	0.1060	2.6600e-003	24.8517
Total		**21.4105**	**0.1060**	**2.6600e-003**	**24.8517**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.2848	0.5487	0.0000	23.0027
Unmitigated	9.2848	0.5487	0.0000	23.0027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Shopping Ctr

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Shopping Ctr

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEMod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Strip Mall

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	20.3869	21.4105	0.1060	2.6600e-003	24.8517
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**211.5687**	**221.8772**	**0.6625**	**4.3300e-003**	**239.7293**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	191.1807	191.1807	7.8100e-003	1.6700e-003	191.8737
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	20.3869	21.4105	0.1060	2.6600e-003	24.8517
Total	**0.1780**	**3.5100e-003**	**3.5000e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**211.5687**	**221.8772**	**0.6625**	**4.3300e-003**	**239.7293**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.3685	187.3685	7.7400e-003	1.6000e-003	188.0388
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Strip Mall	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Strip Mall	588060	187.3685	7.7400e-003	1.6000e-003	188.0388
Total		**187.3685**	**7.7400e-003**	**1.6000e-003**	**188.0388**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1777	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1600e-003
Total	**0.1776**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	21.4105	0.1060	2.6600e-003	24.8517
Unmitigated	21.4105	0.1060	2.6600e-003	24.8517

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Strip Mall	3.2266 / 1.97759	21.4105	0.1060	2.6600e-003	24.8517
Total		**21.4105**	**0.1060**	**2.6600e-003**	**24.8517**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Strip Mall	3.2266 / 1.97759	21.4105	0.1060	2.6600e-003	24.8517
Total		**21.4105**	**0.1060**	**2.6600e-003**	**24.8517**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.2848	0.5487	0.0000	23.0027
Unmitigated	9.2848	0.5487	0.0000	23.0027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Strip Mall	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Strip Mall	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Strip Mall

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Strip Mall

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Vehicle Trips - No CalEEmod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	PhaseEndDate	11/15/2017	11/14/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9757**	**0.0192**	**0.0206**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.7000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.547972	0.046127	0.199330	0.125604	0.017697	0.005953	0.018360	0.027618	0.002341	0.002583	0.004804	0.000667	0.000944

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Unmitigated	0.9736	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.5100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	3.0000e-005		0.0102
Total	**0.9736**	**4.0000e-005**	**4.5100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**3.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Single Family Residential

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	9

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0232	1.0300e-003	0.0402	3.0000e-005		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.2008	0.6629	0.8637	1.0000e-003	1.0000e-005	0.8920
Energy	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	8.3215	8.3215	2.5000e-004	1.1000e-004	8.3618
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.7490	0.0000	0.7490	0.0443	0.0000	1.8557
Water						0.0000	0.0000		0.0000	0.0000	0.0620	0.6236	0.6856	6.4000e-003	1.6000e-004	0.8919
Total	**0.0236**	**4.8300e-003**	**0.0418**	**5.0000e-005**	**0.0000**	**2.0200e-003**	**2.0200e-003**	**0.0000**	**2.0200e-003**	**2.0200e-003**	**1.0118**	**9.6079**	**10.6197**	**0.0519**	**2.8000e-004**	**12.0013**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0222	8.8000e-004	0.0310	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.6629	0.6629	6.0000e-005	1.0000e-005	0.6677
Energy	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	8.3215	8.3215	2.5000e-004	1.1000e-004	8.3618
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.7490	0.0000	0.7490	0.0443	0.0000	1.8557
Water						0.0000	0.0000		0.0000	0.0000	0.0620	0.6236	0.6856	6.4000e-003	1.6000e-004	0.8919
Total	**0.0226**	**4.6800e-003**	**0.0327**	**3.0000e-005**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.8111**	**9.6079**	**10.4190**	**0.0510**	**2.8000e-004**	**11.7771**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.27**	**3.11**	**21.96**	**40.00**	**0.00**	**74.26**	**74.26**	**0.00**	**74.26**	**74.26**	**19.84**	**0.00**	**1.89**	**1.81**	**0.00**	**1.87**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3.9230	3.9230	1.7000e-004	3.0000e-005	3.9372
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3.9230	3.9230	1.7000e-004	3.0000e-005	3.9372
NaturalGas Mitigated	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246
NaturalGas Unmitigated	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	82423.8	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246
Total		**4.4000e-004**	**3.8000e-003**	**1.6200e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.3985**	**4.3985**	**8.0000e-005**	**8.0000e-005**	**4.4246**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	82423.8	4.4000e-004	3.8000e-003	1.6200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.3985	4.3985	8.0000e-005	8.0000e-005	4.4246
Total		**4.4000e-004**	**3.8000e-003**	**1.6200e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.3985**	**4.3985**	**8.0000e-005**	**8.0000e-005**	**4.4246**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	24624.9	3.9230	1.7000e-004	3.0000e-005	3.9372
Total		**3.9230**	**1.7000e-004**	**3.0000e-005**	**3.9372**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	24624.9	3.9230	1.7000e-004	3.0000e-005	3.9372
Total		**3.9230**	**1.7000e-004**	**3.0000e-005**	**3.9372**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0222	8.8000e-004	0.0310	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.6629	0.6629	6.0000e-005	1.0000e-005	0.6677
Unmitigated	0.0232	1.0300e-003	0.0402	3.0000e-005		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.2008	0.6629	0.8637	1.0000e-003	1.0000e-005	0.8920

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0700e-003	6.8000e-004	9.4200e-003	3.0000e-005		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.2008	0.6124	0.8131	9.5000e-004	1.0000e-005	0.8402
Landscaping	9.2000e-004	3.6000e-004	0.0308	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0505	0.0505	5.0000e-005	0.0000	0.0517
Total	**0.0232**	**1.0400e-003**	**0.0402**	**3.0000e-005**		**1.7100e-003**	**1.7100e-003**		**1.7100e-003**	**1.7100e-003**	**0.2008**	**0.6629**	**0.8637**	**1.0000e-003**	**1.0000e-005**	**0.8920**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.0000e-005	5.3000e-004	2.3000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6124	0.6124	1.0000e-005	1.0000e-005	0.6160
Landscaping	9.2000e-004	3.6000e-004	0.0308	0.0000		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	0.0505	0.0505	5.0000e-005	0.0000	0.0517
Total	**0.0222**	**8.9000e-004**	**0.0310**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.6629**	**0.6629**	**6.0000e-005**	**1.0000e-005**	**0.6677**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.6856	6.4000e-003	1.6000e-004	0.8919
Unmitigated	0.6856	6.4000e-003	1.6000e-004	0.8919

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.195462 / 0.123226	0.6856	6.4000e-003	1.6000e-004	0.8919
Total		**0.6856**	**6.4000e-003**	**1.6000e-004**	**0.8919**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.195462 / 0.123226	0.6856	6.4000e-003	1.6000e-004	0.8919
Total		**0.6856**	**6.4000e-003**	**1.6000e-004**	**0.8919**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7490	0.0443	0.0000	1.8557
Unmitigated	0.7490	0.0443	0.0000	1.8557

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	3.69	0.7490	0.0443	0.0000	1.8557
Total		**0.7490**	**0.0443**	**0.0000**	**1.8557**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	3.69	0.7490	0.0443	0.0000	1.8557
Total		**0.7490**	**0.0443**	**0.0000**	**1.8557**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Single Family Residential

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	9

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2095	0.0571	0.9997	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5512
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2119**	**0.0780**	**1.0086**	**2.8100e-003**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.1264**	**0.1264**	**17.7049**	**81.0126**	**98.7175**	**0.0847**	**1.4800e-003**	**101.2760**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1285	0.0451	0.2644	2.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	54.4457	54.4457	1.4600e-003	9.9000e-004	54.7772
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1309**	**0.0660**	**0.2733**	**4.1000e-004**	**0.0000**	**6.4700e-003**	**6.4700e-003**	**0.0000**	**6.4700e-003**	**6.4700e-003**	**0.0000**	**81.0126**	**81.0126**	**1.9700e-003**	**1.4800e-003**	**81.5019**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**38.21**	**15.39**	**72.90**	**85.41**	**0.00**	**94.88**	**94.88**	**0.00**	**94.88**	**94.88**	**100.00**	**0.00**	**17.93**	**97.68**	**0.00**	**19.52**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
NaturalGas Unmitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	225.819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.225819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1285	0.0451	0.2644	2.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	54.4457	54.4457	1.4600e-003	9.9000e-004	54.7772
Unmitigated	0.2095	0.0571	0.9997	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5512

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0859	0.0543	0.7533	2.6700e-003		0.1234	0.1234		0.1234	0.1234	17.7049	54.0000	71.7049	0.0838	9.9000e-004	74.0950
Landscaping	7.3700e-003	2.8400e-003	0.2464	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4457	0.4457	4.2000e-004		0.4563
Total	**0.2095**	**0.0571**	**0.9997**	**2.6800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**17.7049**	**54.4457**	**72.1506**	**0.0842**	**9.9000e-004**	**74.5512**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.9500e-003	0.0423	0.0180	2.7000e-004		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	54.0000	54.0000	1.0300e-003	9.9000e-004	54.3209
Landscaping	7.3700e-003	2.8400e-003	0.2464	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4457	0.4457	4.2000e-004		0.4563
Total	**0.1285**	**0.0451**	**0.2644**	**2.8000e-004**		**4.7900e-003**	**4.7900e-003**		**4.7900e-003**	**4.7900e-003**	**0.0000**	**54.4457**	**54.4457**	**1.4500e-003**	**9.9000e-004**	**54.7772**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Single Family Residential

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	9

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.15	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2095	0.0571	0.9997	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5512
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2119**	**0.0780**	**1.0086**	**2.8100e-003**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.1264**	**0.1264**	**17.7049**	**81.0126**	**98.7175**	**0.0847**	**1.4800e-003**	**101.2760**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1285	0.0451	0.2644	2.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	54.4457	54.4457	1.4600e-003	9.9000e-004	54.7772
Energy	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1309**	**0.0660**	**0.2733**	**4.1000e-004**	**0.0000**	**6.4700e-003**	**6.4700e-003**	**0.0000**	**6.4700e-003**	**6.4700e-003**	**0.0000**	**81.0126**	**81.0126**	**1.9700e-003**	**1.4800e-003**	**81.5019**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**38.21**	**15.39**	**72.90**	**85.41**	**0.00**	**94.88**	**94.88**	**0.00**	**94.88**	**94.88**	**100.00**	**0.00**	**17.93**	**97.68**	**0.00**	**19.52**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
NaturalGas Unmitigated	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	225.819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0.225819	2.4400e-003	0.0208	8.8600e-003	1.3000e-004		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003		26.5669	26.5669	5.1000e-004	4.9000e-004	26.7248
Total		**2.4400e-003**	**0.0208**	**8.8600e-003**	**1.3000e-004**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**		**26.5669**	**26.5669**	**5.1000e-004**	**4.9000e-004**	**26.7248**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1285	0.0451	0.2644	2.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	54.4457	54.4457	1.4600e-003	9.9000e-004	54.7772
Unmitigated	0.2095	0.0571	0.9997	2.6800e-003		0.1247	0.1247		0.1247	0.1247	17.7049	54.4457	72.1506	0.0842	9.9000e-004	74.5512

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0859	0.0543	0.7533	2.6700e-003		0.1234	0.1234		0.1234	0.1234	17.7049	54.0000	71.7049	0.0838	9.9000e-004	74.0950
Landscaping	7.3700e-003	2.8400e-003	0.2464	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4457	0.4457	4.2000e-004		0.4563
Total	**0.2095**	**0.0571**	**0.9997**	**2.6800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**17.7049**	**54.4457**	**72.1506**	**0.0842**	**9.9000e-004**	**74.5512**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4.9500e-003	0.0423	0.0180	2.7000e-004		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	54.0000	54.0000	1.0300e-003	9.9000e-004	54.3209
Landscaping	7.3700e-003	2.8400e-003	0.2464	1.0000e-005		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003		0.4457	0.4457	4.2000e-004		0.4563
Total	**0.1285**	**0.0451**	**0.2644**	**2.8000e-004**		**4.7900e-003**	**4.7900e-003**		**4.7900e-003**	**4.7900e-003**	**0.0000**	**54.4457**	**54.4457**	**1.4500e-003**	**9.9000e-004**	**54.7772**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Low Rise Apts

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emissions, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0735	5.5200e-003	0.2145	1.9000e-004		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	1.0708	3.5354	4.6062	5.3200e-003	6.0000e-005	4.7571
Energy	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	24.7599	24.7599	7.3000e-004	3.5000e-004	24.8818
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	3.3257	3.6564	0.0341	8.3000e-004	4.7567
Total	**0.0749**	**0.0176**	**0.2196**	**2.7000e-004**	**0.0000**	**0.0101**	**0.0101**	**0.0000**	**0.0101**	**0.0101**	**2.8955**	**31.6210**	**34.5165**	**0.1285**	**1.2400e-003**	**38.0970**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0681	4.7200e-003	0.1655	3.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	3.5354	3.5354	3.2000e-004	6.0000e-005	3.5612
Energy	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	24.7599	24.7599	7.3000e-004	3.5000e-004	24.8818
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	3.3257	3.6564	0.0341	8.3000e-004	4.7567
Total	**0.0695**	**0.0168**	**0.1706**	**1.1000e-004**	**0.0000**	**2.1100e-003**	**2.1100e-003**	**0.0000**	**2.1100e-003**	**2.1100e-003**	**1.8247**	**31.6210**	**33.4457**	**0.1235**	**1.2400e-003**	**36.9011**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**7.20**	**4.55**	**22.32**	**59.26**	**0.00**	**79.13**	**79.13**	**0.00**	**79.13**	**79.13**	**36.98**	**0.00**	**3.10**	**3.89**	**0.00**	**3.14**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10.8086	10.8086	4.6000e-004	9.0000e-005	10.8477
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10.8086	10.8086	4.6000e-004	9.0000e-005	10.8477
NaturalGas Mitigated	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341
NaturalGas Unmitigated	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	261436	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341
Total		**1.4100e-003**	**0.0121**	**5.1300e-003**	**8.0000e-005**		**9.7000e-004**	**9.7000e-004**		**9.7000e-004**	**9.7000e-004**	**0.0000**	**13.9512**	**13.9512**	**2.7000e-004**	**2.6000e-004**	**14.0341**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	261436	1.4100e-003	0.0121	5.1300e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9512	13.9512	2.7000e-004	2.6000e-004	14.0341
Total		**1.4100e-003**	**0.0121**	**5.1300e-003**	**8.0000e-005**		**9.7000e-004**	**9.7000e-004**		**9.7000e-004**	**9.7000e-004**	**0.0000**	**13.9512**	**13.9512**	**2.7000e-004**	**2.6000e-004**	**14.0341**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	67846.2	10.8086	4.6000e-004	9.0000e-005	10.8477
Total		**10.8086**	**4.6000e-004**	**9.0000e-005**	**10.8477**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	67846.2	10.8086	4.6000e-004	9.0000e-005	10.8477
Total		**10.8086**	**4.6000e-004**	**9.0000e-005**	**10.8477**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0681	4.7200e-003	0.1655	3.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	3.5354	3.5354	3.2000e-004	6.0000e-005	3.5612
Unmitigated	0.0735	5.5200e-003	0.2145	1.9000e-004		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	1.0708	3.5354	4.6062	5.3200e-003	6.0000e-005	4.7571

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.7300e-003	3.6200e-003	0.0502	1.8000e-004		8.2200e-003	8.2200e-003		8.2200e-003	8.2200e-003	1.0708	3.2659	4.3366	5.0700e-003	6.0000e-005	4.4812
Landscaping	4.9100e-003	1.9000e-003	0.1643	1.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	0.2695	0.2695	2.6000e-004	0.0000	0.2759
Total	**0.0735**	**5.5200e-003**	**0.2145**	**1.9000e-004**		**9.1400e-003**	**9.1400e-003**		**9.1400e-003**	**9.1400e-003**	**1.0708**	**3.5354**	**4.6062**	**5.3300e-003**	**6.0000e-005**	**4.7571**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.3000e-004	2.8200e-003	1.2000e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.2659	3.2659	6.0000e-005	6.0000e-005	3.2853
Landscaping	4.9100e-003	1.9000e-003	0.1643	1.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	0.2695	0.2695	2.6000e-004	0.0000	0.2759
Total	**0.0681**	**4.7200e-003**	**0.1655**	**3.0000e-005**		**1.1500e-003**	**1.1500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**3.5354**	**3.5354**	**3.2000e-004**	**6.0000e-005**	**3.5612**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.6564	0.0341	8.3000e-004	4.7567
Unmitigated	3.6564	0.0341	8.3000e-004	4.7567

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.04246 / 0.657206	3.6564	0.0341	8.3000e-004	4.7567
Total		**3.6564**	**0.0341**	**8.3000e-004**	**4.7567**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.04246 / 0.657206	3.6564	0.0341	8.3000e-004	4.7567
Total		**3.6564**	**0.0341**	**8.3000e-004**	**4.7567**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.4940	0.0883	0.0000	3.7014
Unmitigated	1.4940	0.0883	0.0000	3.7014

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Low Rise Apts

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emissions, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8495**	**0.3708**	**5.3599**	**0.0147**	**0.0000**	**0.6706**	**0.6706**	**0.0000**	**0.6706**	**0.6706**	**94.4262**	**374.6432**	**469.0694**	**0.4508**	**6.8200e-003**	**482.3737**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4177**	**0.3068**	**1.4383**	**1.9300e-003**	**0.0000**	**0.0309**	**0.0309**	**0.0000**	**0.0309**	**0.0309**	**0.0000**	**374.6432**	**374.6432**	**9.4000e-003**	**6.8200e-003**	**376.9119**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.83**	**17.25**	**73.17**	**86.89**	**0.00**	**95.39**	**95.39**	**0.00**	**95.39**	**95.39**	**100.00**	**0.00**	**20.13**	**97.91**	**0.00**	**21.86**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
NaturalGas Unmitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	716.264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.716264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Unmitigated	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.8418**	**0.3047**	**5.3319**	**0.0143**		**0.6653**	**0.6653**		**0.6653**	**0.6653**	**94.4262**	**290.3768**	**384.8031**	**0.4492**	**5.2800e-003**	**397.6066**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.4099**	**0.2408**	**1.4102**	**1.5100e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**290.3768**	**290.3768**	**7.7800e-003**	**5.2800e-003**	**292.1448**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Low Rise Apts

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emissions, refer to separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	7.16	0.00
tblVehicleTrips	SU_TR	6.07	0.00
tblVehicleTrips	WD_TR	6.59	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8495**	**0.3708**	**5.3599**	**0.0147**	**0.0000**	**0.6706**	**0.6706**	**0.0000**	**0.6706**	**0.6706**	**94.4262**	**374.6432**	**469.0694**	**0.4508**	**6.8200e-003**	**482.3737**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Energy	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4177**	**0.3068**	**1.4383**	**1.9300e-003**	**0.0000**	**0.0309**	**0.0309**	**0.0000**	**0.0309**	**0.0309**	**0.0000**	**374.6432**	**374.6432**	**9.4000e-003**	**6.8200e-003**	**376.9119**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.83**	**17.25**	**73.17**	**86.89**	**0.00**	**95.39**	**95.39**	**0.00**	**95.39**	**95.39**	**100.00**	**0.00**	**20.13**	**97.91**	**0.00**	**21.86**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
NaturalGas Unmitigated	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	716.264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.716264	7.7200e-003	0.0660	0.0281	4.2000e-004		5.3400e-003	5.3400e-003		5.3400e-003	5.3400e-003		84.2663	84.2663	1.6200e-003	1.5400e-003	84.7671
Total		**7.7200e-003**	**0.0660**	**0.0281**	**4.2000e-004**		**5.3400e-003**	**5.3400e-003**		**5.3400e-003**	**5.3400e-003**		**84.2663**	**84.2663**	**1.6200e-003**	**1.5400e-003**	**84.7671**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Unmitigated	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.8418**	**0.3047**	**5.3319**	**0.0143**		**0.6653**	**0.6653**		**0.6653**	**0.6653**	**94.4262**	**290.3768**	**384.8031**	**0.4492**	**5.2800e-003**	**397.6066**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.4099**	**0.2408**	**1.4102**	**1.5100e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**290.3768**	**290.3768**	**7.7800e-003**	**5.2800e-003**	**292.1448**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Mid Rise Apts

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	38.00	Dwelling Unit	1.00	38,000.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - no construction worker trips

On-road Fugitive Dust - No construction dust emissions

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, use separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	1.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	1.90	0.00
tblWoodstoves	NumberNoncatalytic	1.90	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1617	0.0112	0.3930	6.0000e-005		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	8.3966	8.3966	7.6000e-004	1.4000e-004	8.4579
Energy	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	51.6719	51.6719	1.5700e-003	7.1000e-004	51.9219
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.5483	0.0000	3.5483	0.2097	0.0000	8.7907
Water						0.0000	0.0000		0.0000	0.0000	0.7855	7.8985	8.6840	0.0810	1.9700e-003	11.2971
Total	**0.1644**	**0.0347**	**0.4030**	**2.1000e-004**	**0.0000**	**4.6100e-003**	**4.6100e-003**	**0.0000**	**4.6100e-003**	**4.6100e-003**	**4.3338**	**67.9670**	**72.3007**	**0.2930**	**2.8200e-003**	**80.4676**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1617	0.0112	0.3930	6.0000e-005		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	8.3966	8.3966	7.6000e-004	1.4000e-004	8.4579
Energy	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	51.6719	51.6719	1.5700e-003	7.1000e-004	51.9219
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.5483	0.0000	3.5483	0.2097	0.0000	8.7907
Water						0.0000	0.0000		0.0000	0.0000	0.7855	7.8985	8.6840	0.0810	1.9700e-003	11.2971
Total	**0.1644**	**0.0347**	**0.4030**	**2.1000e-004**	**0.0000**	**4.6100e-003**	**4.6100e-003**	**0.0000**	**4.6100e-003**	**4.6100e-003**	**4.3338**	**67.9670**	**72.3007**	**0.2930**	**2.8200e-003**	**80.4676**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.5068	24.5068	1.0500e-003	2.1000e-004	24.5954
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.5068	24.5068	1.0500e-003	2.1000e-004	24.5954
NaturalGas Mitigated	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265
NaturalGas Unmitigated	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	509054	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265
Total		**2.7400e-003**	**0.0235**	**9.9800e-003**	**1.5000e-004**		**1.9000e-003**	**1.9000e-003**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**27.1651**	**27.1651**	**5.2000e-004**	**5.0000e-004**	**27.3265**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	509054	2.7400e-003	0.0235	9.9800e-003	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.1651	27.1651	5.2000e-004	5.0000e-004	27.3265
Total		**2.7400e-003**	**0.0235**	**9.9800e-003**	**1.5000e-004**		**1.9000e-003**	**1.9000e-003**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**27.1651**	**27.1651**	**5.2000e-004**	**5.0000e-004**	**27.3265**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	153830	24.5068	1.0500e-003	2.1000e-004	24.5954
Total		**24.5068**	**1.0500e-003**	**2.1000e-004**	**24.5954**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	153830	24.5068	1.0500e-003	2.1000e-004	24.5954
Total		**24.5068**	**1.0500e-003**	**2.1000e-004**	**24.5954**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1617	0.0112	0.3930	6.0000e-005		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	8.3966	8.3966	7.6000e-004	1.4000e-004	8.4579
Unmitigated	0.1617	0.0112	0.3930	6.0000e-005		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	8.3966	8.3966	7.6000e-004	1.4000e-004	8.4579

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.8000e-004	6.7000e-003	2.8500e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7564	7.7564	1.5000e-004	1.4000e-004	7.8025
Landscaping	0.0117	4.5000e-003	0.3902	2.0000e-005		2.1700e-003	2.1700e-003		2.1700e-003	2.1700e-003	0.0000	0.6401	0.6401	6.1000e-004	0.0000	0.6554
Total	**0.1617**	**0.0112**	**0.3930**	**6.0000e-005**		**2.7100e-003**	**2.7100e-003**		**2.7100e-003**	**2.7100e-003**	**0.0000**	**8.3966**	**8.3966**	**7.6000e-004**	**1.4000e-004**	**8.4579**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.8000e-004	6.7000e-003	2.8500e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7564	7.7564	1.5000e-004	1.4000e-004	7.8025
Landscaping	0.0117	4.5000e-003	0.3902	2.0000e-005		2.1700e-003	2.1700e-003		2.1700e-003	2.1700e-003	0.0000	0.6401	0.6401	6.1000e-004	0.0000	0.6554
Total	**0.1617**	**0.0112**	**0.3930**	**6.0000e-005**		**2.7100e-003**	**2.7100e-003**		**2.7100e-003**	**2.7100e-003**	**0.0000**	**8.3966**	**8.3966**	**7.6000e-004**	**1.4000e-004**	**8.4579**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.6840	0.0810	1.9700e-003	11.2971
Unmitigated	8.6840	0.0810	1.9700e-003	11.2971

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.47585 / 1.56086	8.6840	0.0810	1.9700e-003	11.2971
Total		**8.6840**	**0.0810**	**1.9700e-003**	**11.2971**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.47585 / 1.56086	8.6840	0.0810	1.9700e-003	11.2971
Total		**8.6840**	**0.0810**	**1.9700e-003**	**11.2971**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.5483	0.2097	0.0000	8.7907
Unmitigated	3.5483	0.2097	0.0000	8.7907

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	17.48	3.5483	0.2097	0.0000	8.7907
Total		**3.5483**	**0.2097**	**0.0000**	**8.7907**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	17.48	3.5483	0.2097	0.0000	8.7907
Total		**3.5483**	**0.2097**	**0.0000**	**8.7907**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Mid Rise Apts

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	38.00	Dwelling Unit	1.00	38,000.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - no construction worker trips

On-road Fugitive Dust - No construction dust emissions

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, use separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	1.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	1.90	0.00
tblWoodstoves	NumberNoncatalytic	1.90	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9886**	**0.7004**	**3.4040**	**4.4100e-003**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**853.7238**	**853.7238**	**0.0216**	**0.0156**	**858.8978**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9886**	**0.7004**	**3.4040**	**4.4100e-003**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**853.7238**	**853.7238**	**0.0216**	**0.0156**	**858.8978**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
NaturalGas Unmitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1394.67	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.39467	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440
Unmitigated	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0934	0.0360	3.1213	1.7000e-004		0.0174	0.0174		0.0174	0.0174		5.6450	5.6450	5.3700e-003		5.7793
Total	**0.9736**	**0.5718**	**3.3493**	**3.5900e-003**		**0.0607**	**0.0607**		**0.0607**	**0.0607**	**0.0000**	**689.6450**	**689.6450**	**0.0185**	**0.0125**	**693.8440**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0934	0.0360	3.1213	1.7000e-004		0.0174	0.0174		0.0174	0.0174		5.6450	5.6450	5.3700e-003		5.7793
Total	**0.9736**	**0.5718**	**3.3493**	**3.5900e-003**		**0.0607**	**0.0607**		**0.0607**	**0.0607**	**0.0000**	**689.6450**	**689.6450**	**0.0185**	**0.0125**	**693.8440**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Mid Rise Apts

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	38.00	Dwelling Unit	1.00	38,000.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - no construction worker trips

On-road Fugitive Dust - No construction dust emissions

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, use separate VMT emission analysis.

Woodstoves - No wood stoves or fireplaces.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	1.90	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	6.39	0.00
tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblWoodstoves	NumberCatalytic	1.90	0.00
tblWoodstoves	NumberNoncatalytic	1.90	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9886**	**0.7004**	**3.4040**	**4.4100e-003**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**853.7238**	**853.7238**	**0.0216**	**0.0156**	**858.8978**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440
Energy	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9886**	**0.7004**	**3.4040**	**4.4100e-003**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**0.0711**	**0.0711**	**0.0000**	**853.7238**	**853.7238**	**0.0216**	**0.0156**	**858.8978**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
NaturalGas Unmitigated	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1394.67	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.39467	0.0150	0.1285	0.0547	8.2000e-004		0.0104	0.0104		0.0104	0.0104		164.0788	164.0788	3.1400e-003	3.0100e-003	165.0538
Total		**0.0150**	**0.1285**	**0.0547**	**8.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**164.0788**	**164.0788**	**3.1400e-003**	**3.0100e-003**	**165.0538**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440
Unmitigated	0.9736	0.5718	3.3493	3.5900e-003		0.0607	0.0607		0.0607	0.0607	0.0000	689.6450	689.6450	0.0185	0.0125	693.8440

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0934	0.0360	3.1213	1.7000e-004		0.0174	0.0174		0.0174	0.0174		5.6450	5.6450	5.3700e-003		5.7793
Total	**0.9736**	**0.5718**	**3.3493**	**3.5900e-003**		**0.0607**	**0.0607**		**0.0607**	**0.0607**	**0.0000**	**689.6450**	**689.6450**	**0.0185**	**0.0125**	**693.8440**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0627	0.5358	0.2280	3.4200e-003		0.0433	0.0433		0.0433	0.0433	0.0000	684.0000	684.0000	0.0131	0.0125	688.0647
Landscaping	0.0934	0.0360	3.1213	1.7000e-004		0.0174	0.0174		0.0174	0.0174		5.6450	5.6450	5.3700e-003		5.7793
Total	**0.9736**	**0.5718**	**3.3493**	**3.5900e-003**		**0.0607**	**0.0607**		**0.0607**	**0.0607**	**0.0000**	**689.6450**	**689.6450**	**0.0185**	**0.0125**	**693.8440**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Condos/Townhouse

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Long Beach Land Use Elements - Condos/Townhouse - Los Angeles-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblVehicleTrips	ST_TR	5.67	0.00
tblVehicleTrips	SU_TR	4.84	0.00
tblVehicleTrips	WD_TR	5.81	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Maximum	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Maximum	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0735	5.5200e-003	0.2145	1.9000e-004		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	1.0708	3.5354	4.6062	5.3200e-003	6.0000e-005	4.7571
Energy	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	27.5124	27.5124	8.3000e-004	3.8000e-004	27.6459
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	3.3257	3.6564	0.0341	8.3000e-004	4.7567
Total	**0.0749**	**0.0182**	**0.2199**	**2.7000e-004**	**0.0000**	**0.0102**	**0.0102**	**0.0000**	**0.0102**	**0.0102**	**2.8955**	**34.3735**	**37.2690**	**0.1286**	**1.2700e-003**	**40.8611**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0681	4.7200e-003	0.1655	3.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	3.5354	3.5354	3.2000e-004	6.0000e-005	3.5612
Energy	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	27.5124	27.5124	8.3000e-004	3.8000e-004	27.6459
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1.4940	0.0000	1.4940	0.0883	0.0000	3.7014
Water						0.0000	0.0000		0.0000	0.0000	0.3307	3.3257	3.6564	0.0341	8.3000e-004	4.7567
Total	**0.0696**	**0.0174**	**0.1709**	**1.1000e-004**	**0.0000**	**2.1600e-003**	**2.1600e-003**	**0.0000**	**2.1600e-003**	**2.1600e-003**	**1.8247**	**34.3735**	**36.1982**	**0.1236**	**1.2700e-003**	**39.6652**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**7.19**	**4.40**	**22.29**	**59.26**	**0.00**	**78.74**	**78.74**	**0.00**	**78.74**	**78.74**	**36.98**	**0.00**	**2.87**	**3.89**	**0.00**	**2.93**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.8467	12.8467	5.5000e-004	1.1000e-004	12.8931
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.8467	12.8467	5.5000e-004	1.1000e-004	12.8931
NaturalGas Mitigated	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529
NaturalGas Unmitigated	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	274825	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529
Total		**1.4800e-003**	**0.0127**	**5.3900e-003**	**8.0000e-005**		**1.0200e-003**	**1.0200e-003**		**1.0200e-003**	**1.0200e-003**	**0.0000**	**14.6657**	**14.6657**	**2.8000e-004**	**2.7000e-004**	**14.7529**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	274825	1.4800e-003	0.0127	5.3900e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6657	14.6657	2.8000e-004	2.7000e-004	14.7529
Total		**1.4800e-003**	**0.0127**	**5.3900e-003**	**8.0000e-005**		**1.0200e-003**	**1.0200e-003**		**1.0200e-003**	**1.0200e-003**	**0.0000**	**14.6657**	**14.6657**	**2.8000e-004**	**2.7000e-004**	**14.7529**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	80639	12.8467	5.5000e-004	1.1000e-004	12.8931
Total		**12.8467**	**5.5000e-004**	**1.1000e-004**	**12.8931**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	80639	12.8467	5.5000e-004	1.1000e-004	12.8931
Total		**12.8467**	**5.5000e-004**	**1.1000e-004**	**12.8931**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0681	4.7200e-003	0.1655	3.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	3.5354	3.5354	3.2000e-004	6.0000e-005	3.5612
Unmitigated	0.0735	5.5200e-003	0.2145	1.9000e-004		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	1.0708	3.5354	4.6062	5.3200e-003	6.0000e-005	4.7571

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.7300e-003	3.6200e-003	0.0502	1.8000e-004		8.2200e-003	8.2200e-003		8.2200e-003	8.2200e-003	1.0708	3.2659	4.3366	5.0700e-003	6.0000e-005	4.4812
Landscaping	4.9100e-003	1.9000e-003	0.1643	1.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	0.2695	0.2695	2.6000e-004	0.0000	0.2759
Total	**0.0735**	**5.5200e-003**	**0.2145**	**1.9000e-004**		**9.1400e-003**	**9.1400e-003**		**9.1400e-003**	**9.1400e-003**	**1.0708**	**3.5354**	**4.6062**	**5.3300e-003**	**6.0000e-005**	**4.7571**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.3000e-004	2.8200e-003	1.2000e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.2659	3.2659	6.0000e-005	6.0000e-005	3.2853
Landscaping	4.9100e-003	1.9000e-003	0.1643	1.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	0.2695	0.2695	2.6000e-004	0.0000	0.2759
Total	**0.0681**	**4.7200e-003**	**0.1655**	**3.0000e-005**		**1.1500e-003**	**1.1500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**3.5354**	**3.5354**	**3.2000e-004**	**6.0000e-005**	**3.5612**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.6564	0.0341	8.3000e-004	4.7567
Unmitigated	3.6564	0.0341	8.3000e-004	4.7567

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.04246 / 0.657206	3.6564	0.0341	8.3000e-004	4.7567
Total		**3.6564**	**0.0341**	**8.3000e-004**	**4.7567**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.04246 / 0.657206	3.6564	0.0341	8.3000e-004	4.7567
Total		**3.6564**	**0.0341**	**8.3000e-004**	**4.7567**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.4940	0.0883	0.0000	3.7014
Unmitigated	1.4940	0.0883	0.0000	3.7014

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	7.36	1.4940	0.0883	0.0000	3.7014
Total		**1.4940**	**0.0883**	**0.0000**	**3.7014**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Condos/Townhouse

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Long Beach Land Use Elements - Condos/Townhouse - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblVehicleTrips	ST_TR	5.67	0.00
tblVehicleTrips	SU_TR	4.84	0.00
tblVehicleTrips	WD_TR	5.81	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245	0.0000	103.1134	103.1134	4.2800e-003	0.0000	103.2204
Maximum	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**	**0.0000**	**103.1134**	**103.1134**	**4.2800e-003**	**0.0000**	**103.2204**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245	0.0000	103.1134	103.1134	4.2800e-003	0.0000	103.2204
Maximum	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**	**0.0000**	**103.1134**	**103.1134**	**4.2800e-003**	**0.0000**	**103.2204**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8499**	**0.3741**	**5.3614**	**0.0147**	**0.0000**	**0.6709**	**0.6709**	**0.0000**	**0.6709**	**0.6709**	**94.4262**	**378.9586**	**473.3848**	**0.4509**	**6.9000e-003**	**486.7148**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4181**	**0.3102**	**1.4398**	**1.9500e-003**	**0.0000**	**0.0312**	**0.0312**	**0.0000**	**0.0312**	**0.0312**	**0.0000**	**378.9586**	**378.9586**	**9.4800e-003**	**6.9000e-003**	**381.2530**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.81**	**17.10**	**73.15**	**86.77**	**0.00**	**95.35**	**95.35**	**0.00**	**95.35**	**95.35**	**100.00**	**0.00**	**19.95**	**97.90**	**0.00**	**21.67**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		103.1134	103.1134	4.2800e-003		103.2204
Total	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**103.1134**	**103.1134**	**4.2800e-003**		**103.2204**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		103.1134	103.1134	4.2800e-003		103.2204
Total	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**103.1134**	**103.1134**	**4.2800e-003**		**103.2204**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
NaturalGas Unmitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	752.945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0.752945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Unmitigated	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.8418**	**0.3047**	**5.3319**	**0.0143**		**0.6653**	**0.6653**		**0.6653**	**0.6653**	**94.4262**	**290.3768**	**384.8031**	**0.4492**	**5.2800e-003**	**397.6066**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.4099**	**0.2408**	**1.4102**	**1.5100e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**290.3768**	**290.3768**	**7.7800e-003**	**5.2800e-003**	**292.1448**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Condos/Townhouse

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	16.00	Dwelling Unit	1.00	16,000.00	46

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Woodstoves - No wood stoves or fireplaces

Area Mitigation -

Long Beach Land Use Elements - Condos/Townhouse - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberWood	0.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblVehicleTrips	ST_TR	5.67	0.00
tblVehicleTrips	SU_TR	4.84	0.00
tblVehicleTrips	WD_TR	5.81	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245	0.0000	97.1130	97.1130	4.0600e-003	0.0000	97.2145
Maximum	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**	**0.0000**	**97.1130**	**97.1130**	**4.0600e-003**	**0.0000**	**97.2145**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245	0.0000	97.1130	97.1130	4.0600e-003	0.0000	97.2145
Maximum	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**	**0.0000**	**97.1130**	**97.1130**	**4.0600e-003**	**0.0000**	**97.2145**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.8499**	**0.3741**	**5.3614**	**0.0147**	**0.0000**	**0.6709**	**0.6709**	**0.0000**	**0.6709**	**0.6709**	**94.4262**	**378.9586**	**473.3848**	**0.4509**	**6.9000e-003**	**486.7148**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Energy	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4181**	**0.3102**	**1.4398**	**1.9500e-003**	**0.0000**	**0.0312**	**0.0312**	**0.0000**	**0.0312**	**0.0312**	**0.0000**	**378.9586**	**378.9586**	**9.4800e-003**	**6.9000e-003**	**381.2530**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.81**	**17.10**	**73.15**	**86.77**	**0.00**	**95.35**	**95.35**	**0.00**	**95.35**	**95.35**	**100.00**	**0.00**	**19.95**	**97.90**	**0.00**	**21.67**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		97.1130	97.1130	4.0600e-003		97.2145
Total	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**97.1130**	**97.1130**	**4.0600e-003**		**97.2145**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		97.1130	97.1130	4.0600e-003		97.2145
Total	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**97.1130**	**97.1130**	**4.0600e-003**		**97.2145**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
NaturalGas Unmitigated	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	752.945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0.752945	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003		88.5818	88.5818	1.7000e-003	1.6200e-003	89.1082
Total		**8.1200e-003**	**0.0694**	**0.0295**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**		**88.5818**	**88.5818**	**1.7000e-003**	**1.6200e-003**	**89.1082**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4099	0.2408	1.4102	1.5100e-003		0.0256	0.0256		0.0256	0.0256	0.0000	290.3768	290.3768	7.7800e-003	5.2800e-003	292.1448
Unmitigated	0.8418	0.3047	5.3319	0.0143		0.6653	0.6653		0.6653	0.6653	94.4262	290.3768	384.8031	0.4492	5.2800e-003	397.6066

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4582	0.2896	4.0176	0.0142		0.6580	0.6580		0.6580	0.6580	94.4262	288.0000	382.4262	0.4469	5.2800e-003	395.1732
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.8418**	**0.3047**	**5.3319**	**0.0143**		**0.6653**	**0.6653**		**0.6653**	**0.6653**	**94.4262**	**290.3768**	**384.8031**	**0.4492**	**5.2800e-003**	**397.6066**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0274					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3168					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0264	0.2256	0.0960	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	288.0000	288.0000	5.5200e-003	5.2800e-003	289.7114
Landscaping	0.0393	0.0152	1.3142	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003		2.3768	2.3768	2.2600e-003		2.4334
Total	**0.4099**	**0.2408**	**1.4102**	**1.5100e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**290.3768**	**290.3768**	**7.7800e-003**	**5.2800e-003**	**292.1448**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - City Park

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emissions, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	9.9000e-004	0.0111	4.4300e-003	1.0000e-005	2.9400e-003	5.2000e-004	3.4700e-003	1.4900e-003	4.8000e-004	1.9700e-003	0.0000	0.8450	0.8450	2.5000e-004	0.0000	0.8512
Maximum	**9.9000e-004**	**0.0111**	**4.4300e-003**	**1.0000e-005**	**2.9400e-003**	**5.2000e-004**	**3.4700e-003**	**1.4900e-003**	**4.8000e-004**	**1.9700e-003**	**0.0000**	**0.8450**	**0.8450**	**2.5000e-004**	**0.0000**	**0.8512**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	9.9000e-004	0.0111	4.4300e-003	1.0000e-005	2.9400e-003	5.2000e-004	3.4700e-003	1.4900e-003	4.8000e-004	1.9700e-003	0.0000	0.8450	0.8450	2.5000e-004	0.0000	0.8512
Maximum	**9.9000e-004**	**0.0111**	**4.4300e-003**	**1.0000e-005**	**2.9400e-003**	**5.2000e-004**	**3.4700e-003**	**1.4900e-003**	**4.8000e-004**	**1.9700e-003**	**0.0000**	**0.8450**	**0.8450**	**2.5000e-004**	**0.0000**	**0.8512**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.9000e-004	6.8700e-003	0.0128	7.0000e-005	7.6400e-003	3.0000e-005	7.6700e-003	2.0500e-003	3.0000e-005	2.0800e-003	0.0000	6.6977	6.6977	2.6000e-004	0.0000	6.7042
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.1089	2.1089	9.0000e-005	2.0000e-005	2.1165
Total	**0.0421**	**6.8700e-003**	**0.0128**	**7.0000e-005**	**7.6400e-003**	**3.0000e-005**	**7.6700e-003**	**2.0500e-003**	**3.0000e-005**	**2.0800e-003**	**0.0183**	**8.8066**	**8.8249**	**1.4300e-003**	**2.0000e-005**	**8.8660**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.9000e-004	6.8700e-003	0.0128	7.0000e-005	7.6400e-003	3.0000e-005	7.6700e-003	2.0500e-003	3.0000e-005	2.0800e-003	0.0000	6.6977	6.6977	2.6000e-004	0.0000	6.7042
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.1089	2.1089	9.0000e-005	2.0000e-005	2.1165
Total	**0.0421**	**6.8700e-003**	**0.0128**	**7.0000e-005**	**7.6400e-003**	**3.0000e-005**	**7.6700e-003**	**2.0500e-003**	**3.0000e-005**	**2.0800e-003**	**0.0183**	**8.8066**	**8.8249**	**1.4300e-003**	**2.0000e-005**	**8.8660**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	0.0111	4.2000e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	0.8002	0.8002	2.5000e-004	0.0000	0.8064
Total	**9.6000e-004**	**0.0111**	**4.2000e-003**	**1.0000e-005**	**2.9000e-003**	**5.2000e-004**	**3.4200e-003**	**1.4800e-003**	**4.8000e-004**	**1.9600e-003**	**0.0000**	**0.8002**	**0.8002**	**2.5000e-004**	**0.0000**	**0.8064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	0.0111	4.2000e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	0.8002	0.8002	2.5000e-004	0.0000	0.8064
Total	**9.6000e-004**	**0.0111**	**4.2000e-003**	**1.0000e-005**	**2.9000e-003**	**5.2000e-004**	**3.4200e-003**	**1.4800e-003**	**4.8000e-004**	**1.9600e-003**	**0.0000**	**0.8002**	**0.8002**	**2.5000e-004**	**0.0000**	**0.8064**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.9000e-004	6.8700e-003	0.0128	7.0000e-005	7.6400e-003	3.0000e-005	7.6700e-003	2.0500e-003	3.0000e-005	2.0800e-003	0.0000	6.6977	6.6977	2.6000e-004	0.0000	6.7042
Unmitigated	9.9000e-004	6.8700e-003	0.0128	7.0000e-005	7.6400e-003	3.0000e-005	7.6700e-003	2.0500e-003	3.0000e-005	2.0800e-003	0.0000	6.6977	6.6977	2.6000e-004	0.0000	6.7042

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	20,118	20,118
Total	1.89	22.75	16.74	20,118	20,118

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.1089	9.0000e-005	2.0000e-005	2.1165
Unmitigated	2.1089	9.0000e-005	2.0000e-005	2.1165

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	2.1089	9.0000e-005	2.0000e-005	2.1165
Total		**2.1089**	**9.0000e-005**	**2.0000e-005**	**2.1165**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	2.1089	9.0000e-005	2.0000e-005	2.1165
Total		**2.1089**	**9.0000e-005**	**2.0000e-005**	**2.1165**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - City Park

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emissions, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9797	22.2490	8.8941	0.0183	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,867.3515	1,867.3515	0.5448	0.0000	1,880.9725
Maximum	**1.9797**	**22.2490**	**8.8941**	**0.0183**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,867.3515**	**1,867.3515**	**0.5448**	**0.0000**	**1,880.9725**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9797	22.2490	8.8941	0.0183	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,867.3515	1,867.3515	0.5448	0.0000	1,880.9725
Maximum	**1.9797**	**22.2490**	**8.8941**	**0.0183**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,867.3515**	**1,867.3515**	**0.5448**	**0.0000**	**1,880.9725**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0187	0.1203	0.2360	1.3200e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		136.3268	136.3268	5.0600e-003		136.4534
Total	**0.2438**	**0.1203**	**0.2361**	**1.3200e-003**	**0.1393**	**5.5000e-004**	**0.1398**	**0.0373**	**5.1000e-004**	**0.0378**		**136.3270**	**136.3270**	**5.0600e-003**	**0.0000**	**136.4536**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0187	0.1203	0.2360	1.3200e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		136.3268	136.3268	5.0600e-003		136.4534
Total	**0.2438**	**0.1203**	**0.2361**	**1.3200e-003**	**0.1393**	**5.5000e-004**	**0.1398**	**0.0373**	**5.1000e-004**	**0.0378**		**136.3270**	**136.3270**	**5.0600e-003**	**0.0000**	**136.4536**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615		1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**		**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		103.1134	103.1134	4.2800e-003		103.2204
Total	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**103.1134**	**103.1134**	**4.2800e-003**		**103.2204**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615	0.0000	1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**	**0.0000**	**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		103.1134	103.1134	4.2800e-003		103.2204
Total	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**103.1134**	**103.1134**	**4.2800e-003**		**103.2204**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0187	0.1203	0.2360	1.3200e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		136.3268	136.3268	5.0600e-003		136.4534
Unmitigated	0.0187	0.1203	0.2360	1.3200e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		136.3268	136.3268	5.0600e-003		136.4534

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	20,118	20,118
Total	1.89	22.75	16.74	20,118	20,118

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - City Park

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction trip

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emissions, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9850	22.2531	8.8576	0.0182	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,861.3511	1,861.3511	0.5446	0.0000	1,874.9666
Maximum	**1.9850**	**22.2531**	**8.8576**	**0.0182**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,861.3511**	**1,861.3511**	**0.5446**	**0.0000**	**1,874.9666**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9850	22.2531	8.8576	0.0182	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,861.3511	1,861.3511	0.5446	0.0000	1,874.9666
Maximum	**1.9850**	**22.2531**	**8.8576**	**0.0182**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,861.3511**	**1,861.3511**	**0.5446**	**0.0000**	**1,874.9666**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0182	0.1209	0.2259	1.2600e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		130.1214	130.1214	5.1400e-003		130.2498
Total	**0.2433**	**0.1209**	**0.2260**	**1.2600e-003**	**0.1393**	**5.5000e-004**	**0.1398**	**0.0373**	**5.1000e-004**	**0.0378**		**130.1217**	**130.1217**	**5.1400e-003**	**0.0000**	**130.2500**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0182	0.1209	0.2259	1.2600e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		130.1214	130.1214	5.1400e-003		130.2498
Total	**0.2433**	**0.1209**	**0.2260**	**1.2600e-003**	**0.1393**	**5.5000e-004**	**0.1398**	**0.0373**	**5.1000e-004**	**0.0378**		**130.1217**	**130.1217**	**5.1400e-003**	**0.0000**	**130.2500**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615		1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**		**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		97.1130	97.1130	4.0600e-003		97.2145
Total	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**97.1130**	**97.1130**	**4.0600e-003**		**97.2145**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615	0.0000	1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**	**0.0000**	**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		97.1130	97.1130	4.0600e-003		97.2145
Total	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**97.1130**	**97.1130**	**4.0600e-003**		**97.2145**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0182	0.1209	0.2259	1.2600e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		130.1214	130.1214	5.1400e-003		130.2498
Unmitigated	0.0182	0.1209	0.2259	1.2600e-003	0.1393	5.5000e-004	0.1398	0.0373	5.1000e-004	0.0378		130.1214	130.1214	5.1400e-003		130.2498

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	20,118	20,118
Total	1.89	22.75	16.74	20,118	20,118

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Golf Course

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Golf Course	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	9.9000e-004	0.0111	4.4300e-003	1.0000e-005	2.9400e-003	5.2000e-004	3.4700e-003	1.4900e-003	4.8000e-004	1.9700e-003	0.0000	0.8450	0.8450	2.5000e-004	0.0000	0.8512
Maximum	**9.9000e-004**	**0.0111**	**4.4300e-003**	**1.0000e-005**	**2.9400e-003**	**5.2000e-004**	**3.4700e-003**	**1.4900e-003**	**4.8000e-004**	**1.9700e-003**	**0.0000**	**0.8450**	**0.8450**	**2.5000e-004**	**0.0000**	**0.8512**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	9.9000e-004	0.0111	4.4300e-003	1.0000e-005	2.9400e-003	5.2000e-004	3.4700e-003	1.4900e-003	4.8000e-004	1.9700e-003	0.0000	0.8450	0.8450	2.5000e-004	0.0000	0.8512
Maximum	**9.9000e-004**	**0.0111**	**4.4300e-003**	**1.0000e-005**	**2.9400e-003**	**5.2000e-004**	**3.4700e-003**	**1.4900e-003**	**4.8000e-004**	**1.9700e-003**	**0.0000**	**0.8450**	**0.8450**	**2.5000e-004**	**0.0000**	**0.8512**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.9000e-004	4.8800e-003	8.4000e-003	5.0000e-005	4.8700e-003	2.0000e-005	4.8900e-003	1.3100e-003	2.0000e-005	1.3200e-003	0.0000	4.3365	4.3365	1.7000e-004	0.0000	4.3408
Waste						0.0000	0.0000		0.0000	0.0000	0.1888	0.0000	0.1888	0.0112	0.0000	0.4677
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.1089	2.1089	9.0000e-005	2.0000e-005	2.1165
Total	**0.0418**	**4.8800e-003**	**8.4100e-003**	**5.0000e-005**	**4.8700e-003**	**2.0000e-005**	**4.8900e-003**	**1.3100e-003**	**2.0000e-005**	**1.3200e-003**	**0.1888**	**6.4454**	**6.6342**	**0.0114**	**2.0000e-005**	**6.9250**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	6.9000e-004	4.8800e-003	8.4000e-003	5.0000e-005	4.8700e-003	2.0000e-005	4.8900e-003	1.3100e-003	2.0000e-005	1.3200e-003	0.0000	4.3365	4.3365	1.7000e-004	0.0000	4.3408
Waste						0.0000	0.0000		0.0000	0.0000	0.1888	0.0000	0.1888	0.0112	0.0000	0.4677
Water						0.0000	0.0000		0.0000	0.0000	0.0000	2.1089	2.1089	9.0000e-005	2.0000e-005	2.1165
Total	**0.0418**	**4.8800e-003**	**8.4100e-003**	**5.0000e-005**	**4.8700e-003**	**2.0000e-005**	**4.8900e-003**	**1.3100e-003**	**2.0000e-005**	**1.3200e-003**	**0.1888**	**6.4454**	**6.6342**	**0.0114**	**2.0000e-005**	**6.9250**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	0.0111	4.2000e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	0.8002	0.8002	2.5000e-004	0.0000	0.8064
Total	**9.6000e-004**	**0.0111**	**4.2000e-003**	**1.0000e-005**	**2.9000e-003**	**5.2000e-004**	**3.4200e-003**	**1.4800e-003**	**4.8000e-004**	**1.9600e-003**	**0.0000**	**0.8002**	**0.8002**	**2.5000e-004**	**0.0000**	**0.8064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-003	0.0000	2.9000e-003	1.4800e-003	0.0000	1.4800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	0.0111	4.2000e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	0.8002	0.8002	2.5000e-004	0.0000	0.8064
Total	**9.6000e-004**	**0.0111**	**4.2000e-003**	**1.0000e-005**	**2.9000e-003**	**5.2000e-004**	**3.4200e-003**	**1.4800e-003**	**4.8000e-004**	**1.9600e-003**	**0.0000**	**0.8002**	**0.8002**	**2.5000e-004**	**0.0000**	**0.8064**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0448	0.0448	0.0000	0.0000	0.0448
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0448**	**0.0448**	**0.0000**	**0.0000**	**0.0448**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.9000e-004	4.8800e-003	8.4000e-003	5.0000e-005	4.8700e-003	2.0000e-005	4.8900e-003	1.3100e-003	2.0000e-005	1.3200e-003	0.0000	4.3365	4.3365	1.7000e-004	0.0000	4.3408
Unmitigated	6.9000e-004	4.8800e-003	8.4000e-003	5.0000e-005	4.8700e-003	2.0000e-005	4.8900e-003	1.3100e-003	2.0000e-005	1.3200e-003	0.0000	4.3365	4.3365	1.7000e-004	0.0000	4.3408

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	5.04	5.82	5.88	12,839	12,839
Total	5.04	5.82	5.88	12,839	12,839

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Golf Course	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0411	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0365					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0411**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.1089	9.0000e-005	2.0000e-005	2.1165
Unmitigated	2.1089	9.0000e-005	2.0000e-005	2.1165

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 1.19148	2.1089	9.0000e-005	2.0000e-005	2.1165
Total		**2.1089**	**9.0000e-005**	**2.0000e-005**	**2.1165**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Golf Course	0 / 1.19148	2.1089	9.0000e-005	2.0000e-005	2.1165
Total		**2.1089**	**9.0000e-005**	**2.0000e-005**	**2.1165**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1888	0.0112	0.0000	0.4677
Unmitigated	0.1888	0.0112	0.0000	0.4677

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	0.93	0.1888	0.0112	0.0000	0.4677
Total		**0.1888**	**0.0112**	**0.0000**	**0.4677**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Golf Course	0.93	0.1888	0.0112	0.0000	0.4677
Total		**0.1888**	**0.0112**	**0.0000**	**0.4677**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Golf Course

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Golf Course	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9797	22.2490	8.8941	0.0183	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,867.3515	1,867.3515	0.5448	0.0000	1,880.9725
Maximum	**1.9797**	**22.2490**	**8.8941**	**0.0183**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,867.3515**	**1,867.3515**	**0.5448**	**0.0000**	**1,880.9725**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9797	22.2490	8.8941	0.0183	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,867.3515	1,867.3515	0.5448	0.0000	1,880.9725
Maximum	**1.9797**	**22.2490**	**8.8941**	**0.0183**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,867.3515**	**1,867.3515**	**0.5448**	**0.0000**	**1,880.9725**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.4500e-003	0.0294	0.0530	2.9000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		30.2638	30.2638	1.1400e-003		30.2924
Total	**0.2296**	**0.0294**	**0.0531**	**2.9000e-004**	**0.0305**	**1.2000e-004**	**0.0306**	**8.1500e-003**	**1.1000e-004**	**8.2600e-003**		**30.2640**	**30.2640**	**1.1400e-003**	**0.0000**	**30.2926**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.4500e-003	0.0294	0.0530	2.9000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		30.2638	30.2638	1.1400e-003		30.2924
Total	**0.2296**	**0.0294**	**0.0531**	**2.9000e-004**	**0.0305**	**1.2000e-004**	**0.0306**	**8.1500e-003**	**1.1000e-004**	**8.2600e-003**		**30.2640**	**30.2640**	**1.1400e-003**	**0.0000**	**30.2926**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615		1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**		**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		103.1134	103.1134	4.2800e-003		103.2204
Total	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**103.1134**	**103.1134**	**4.2800e-003**		**103.2204**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615	0.0000	1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**	**0.0000**	**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0500	0.0384	0.4925	1.0400e-003	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		103.1134	103.1134	4.2800e-003		103.2204
Total	**0.0500**	**0.0384**	**0.4925**	**1.0400e-003**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**103.1134**	**103.1134**	**4.2800e-003**		**103.2204**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4500e-003	0.0294	0.0530	2.9000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		30.2638	30.2638	1.1400e-003		30.2924
Unmitigated	4.4500e-003	0.0294	0.0530	2.9000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		30.2638	30.2638	1.1400e-003		30.2924

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	5.04	5.82	5.88	12,839	12,839
Total	5.04	5.82	5.88	12,839	12,839

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Golf Course

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Golf Course	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9850	22.2531	8.8576	0.0182	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,861.3511	1,861.3511	0.5446	0.0000	1,874.9666
Maximum	**1.9850**	**22.2531**	**8.8576**	**0.0182**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,861.3511**	**1,861.3511**	**0.5446**	**0.0000**	**1,874.9666**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.9850	22.2531	8.8576	0.0182	5.8890	1.0459	6.9349	2.9774	0.9622	3.9396	0.0000	1,861.3511	1,861.3511	0.5446	0.0000	1,874.9666
Maximum	**1.9850**	**22.2531**	**8.8576**	**0.0182**	**5.8890**	**1.0459**	**6.9349**	**2.9774**	**0.9622**	**3.9396**	**0.0000**	**1,861.3511**	**1,861.3511**	**0.5446**	**0.0000**	**1,874.9666**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.3300e-003	0.0295	0.0510	2.8000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		28.8590	28.8590	1.1600e-003		28.8881
Total	**0.2295**	**0.0295**	**0.0511**	**2.8000e-004**	**0.0305**	**1.2000e-004**	**0.0306**	**8.1500e-003**	**1.1000e-004**	**8.2600e-003**		**28.8592**	**28.8592**	**1.1600e-003**	**0.0000**	**28.8883**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.3300e-003	0.0295	0.0510	2.8000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		28.8590	28.8590	1.1600e-003		28.8881
Total	**0.2295**	**0.0295**	**0.0511**	**2.8000e-004**	**0.0305**	**1.2000e-004**	**0.0306**	**8.1500e-003**	**1.1000e-004**	**8.2600e-003**		**28.8592**	**28.8592**	**1.1600e-003**	**0.0000**	**28.8883**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615		1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**		**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		97.1130	97.1130	4.0600e-003		97.2145
Total	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**97.1130**	**97.1130**	**4.0600e-003**		**97.2145**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.9297	22.2106	8.4016	0.0172		1.0451	1.0451		0.9615	0.9615	0.0000	1,764.2381	1,764.2381	0.5406		1,777.7521
Total	**1.9297**	**22.2106**	**8.4016**	**0.0172**	**5.7996**	**1.0451**	**6.8446**	**2.9537**	**0.9615**	**3.9152**	**0.0000**	**1,764.2381**	**1,764.2381**	**0.5406**		**1,777.7521**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0425	0.4559	9.8000e-004	0.0894	8.3000e-004	0.0903	0.0237	7.7000e-004	0.0245		97.1130	97.1130	4.0600e-003		97.2145
Total	**0.0553**	**0.0425**	**0.4559**	**9.8000e-004**	**0.0894**	**8.3000e-004**	**0.0903**	**0.0237**	**7.7000e-004**	**0.0245**		**97.1130**	**97.1130**	**4.0600e-003**		**97.2145**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3300e-003	0.0295	0.0510	2.8000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		28.8590	28.8590	1.1600e-003		28.8881
Unmitigated	4.3300e-003	0.0295	0.0510	2.8000e-004	0.0305	1.2000e-004	0.0306	8.1500e-003	1.1000e-004	8.2600e-003		28.8590	28.8590	1.1600e-003		28.8881

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	5.04	5.82	5.88	12,839	12,839
Total	5.04	5.82	5.88	12,839	12,839

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Golf Course	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Golf Course	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Golf Course	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.2251	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1997					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.2251**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Light Industrial

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	20.8958	24.0916	0.3291	7.9300e-003	34.6826
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**140.0001**	**154.1594**	**0.9812**	**9.3600e-003**	**181.4770**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	20.8958	24.0916	0.3291	7.9300e-003	34.6826
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**140.0001**	**154.1594**	**0.9812**	**9.3600e-003**	**181.4770**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	24.0916	0.3291	7.9300e-003	34.6826
Unmitigated	24.0916	0.3291	7.9300e-003	34.6826

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	10.0733 / 0	24.0916	0.3291	7.9300e-003	34.6826
Total		**24.0916**	**0.3291**	**7.9300e-003**	**34.6826**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	10.0733 / 0	24.0916	0.3291	7.9300e-003	34.6826
Total		**24.0916**	**0.3291**	**7.9300e-003**	**34.6826**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Light Industrial

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Light Industrial

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Junior College

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	11.23	0.00
tblVehicleTrips	SU_TR	1.21	0.00
tblVehicleTrips	WD_TR	27.49	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	132.4827	132.4827	4.1800e-003	1.7500e-003	133.1081
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	11.4954	0.0000	11.4954	0.6794	0.0000	28.4793
Water						0.0000	0.0000		0.0000	0.0000	0.6778	10.3469	11.0248	0.0701	1.7300e-003	13.2925
Total	**0.1840**	**0.0578**	**0.0491**	**3.5000e-004**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**12.1732**	**142.8307**	**155.0040**	**0.7536**	**3.4800e-003**	**174.8810**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	132.4827	132.4827	4.1800e-003	1.7500e-003	133.1081
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	11.4954	0.0000	11.4954	0.6794	0.0000	28.4793
Water						0.0000	0.0000		0.0000	0.0000	0.6778	10.3469	11.0248	0.0701	1.7300e-003	13.2925
Total	**0.1840**	**0.0578**	**0.0491**	**3.5000e-004**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**0.0000**	**4.3900e-003**	**4.3900e-003**	**12.1732**	**142.8307**	**155.0040**	**0.7536**	**3.4800e-003**	**174.8810**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	69.5345	69.5345	2.9700e-003	5.9000e-004	69.7858
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	69.5345	69.5345	2.9700e-003	5.9000e-004	69.7858
NaturalGas Mitigated	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223
NaturalGas Unmitigated	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Junior College (2Yr)	1.1796e+006	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223
Total		**6.3600e-003**	**0.0578**	**0.0486**	**3.5000e-004**		**4.3900e-003**	**4.3900e-003**		**4.3900e-003**	**4.3900e-003**	**0.0000**	**62.9482**	**62.9482**	**1.2100e-003**	**1.1500e-003**	**63.3223**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Junior College (2Yr)	1.1796e+006	6.3600e-003	0.0578	0.0486	3.5000e-004		4.3900e-003	4.3900e-003		4.3900e-003	4.3900e-003	0.0000	62.9482	62.9482	1.2100e-003	1.1500e-003	63.3223
Total		**6.3600e-003**	**0.0578**	**0.0486**	**3.5000e-004**		**4.3900e-003**	**4.3900e-003**		**4.3900e-003**	**4.3900e-003**	**0.0000**	**62.9482**	**62.9482**	**1.2100e-003**	**1.1500e-003**	**63.3223**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior College (2Yr)	436471	69.5345	2.9700e-003	5.9000e-004	69.7858
Total		**69.5345**	**2.9700e-003**	**5.9000e-004**	**69.7858**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior College (2Yr)	436471	69.5345	2.9700e-003	5.9000e-004	69.7858
Total		**69.5345**	**2.9700e-003**	**5.9000e-004**	**69.7858**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.0248	0.0701	1.7300e-003	13.2925
Unmitigated	11.0248	0.0701	1.7300e-003	13.2925

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior College (2Yr)	2.13658 / 3.34182	11.0248	0.0701	1.7300e-003	13.2925
Total		**11.0248**	**0.0701**	**1.7300e-003**	**13.2925**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior College (2Yr)	2.13658 / 3.34182	11.0248	0.0701	1.7300e-003	13.2925
Total		**11.0248**	**0.0701**	**1.7300e-003**	**13.2925**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.4954	0.6794	0.0000	28.4793
Unmitigated	11.4954	0.6794	0.0000	28.4793

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior College (2Yr)	56.63	11.4954	0.6794	0.0000	28.4793
Total		**11.4954**	**0.6794**	**0.0000**	**28.4793**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior College (2Yr)	56.63	11.4954	0.6794	0.0000	28.4793
Total		**11.4954**	**0.6794**	**0.0000**	**28.4793**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Junior College

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	11.23	0.00
tblVehicleTrips	SU_TR	1.21	0.00
tblVehicleTrips	WD_TR	27.49	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2706**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3100e-003**	**6.9700e-003**	**382.4806**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2706**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3100e-003**	**6.9700e-003**	**382.4806**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
NaturalGas Unmitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3231.79	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3.23179	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Junior College

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	11.23	0.00
tblVehicleTrips	SU_TR	1.21	0.00
tblVehicleTrips	WD_TR	27.49	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2706**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3100e-003**	**6.9700e-003**	**382.4806**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0084**	**0.3169**	**0.2706**	**1.9000e-003**	**0.0000**	**0.0241**	**0.0241**	**0.0000**	**0.0241**	**0.0241**		**380.2206**	**380.2206**	**7.3100e-003**	**6.9700e-003**	**382.4806**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
NaturalGas Unmitigated	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3231.79	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior College (2Yr)	3.23179	0.0349	0.3168	0.2662	1.9000e-003		0.0241	0.0241		0.0241	0.0241		380.2111	380.2111	7.2900e-003	6.9700e-003	382.4705
Total		**0.0349**	**0.3168**	**0.2662**	**1.9000e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**		**380.2111**	**380.2111**	**7.2900e-003**	**6.9700e-003**	**382.4705**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Library

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.1440	0.0000	8.1440	0.4813	0.0000	20.1764
Water						0.0000	0.0000		0.0000	0.0000	0.4324	6.6004	7.0328	0.0447	1.1100e-003	8.4794
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**8.5764**	**125.7047**	**134.2811**	**0.5301**	**2.5400e-003**	**148.2886**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.1440	0.0000	8.1440	0.4813	0.0000	20.1764
Water						0.0000	0.0000		0.0000	0.0000	0.4324	6.6004	7.0328	0.0447	1.1100e-003	8.4794
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**8.5764**	**125.7047**	**134.2811**	**0.5301**	**2.5400e-003**	**148.2886**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Library	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Library	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.0328	0.0447	1.1100e-003	8.4794
Unmitigated	7.0328	0.0447	1.1100e-003	8.4794

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	1.36294 / 2.13179	7.0328	0.0447	1.1100e-003	8.4794
Total		**7.0328**	**0.0447**	**1.1100e-003**	**8.4794**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	1.36294 / 2.13179	7.0328	0.0447	1.1100e-003	8.4794
Total		**7.0328**	**0.0447**	**1.1100e-003**	**8.4794**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.1440	0.4813	0.0000	20.1764
Unmitigated	8.1440	0.4813	0.0000	20.1764

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	40.12	8.1440	0.4813	0.0000	20.1764
Total		**8.1440**	**0.4813**	**0.0000**	**20.1764**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	40.12	8.1440	0.4813	0.0000	20.1764
Total		**8.1440**	**0.4813**	**0.0000**	**20.1764**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Library

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Library

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Manufacturing

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	3.82	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	20.8958	24.0916	0.3291	7.9300e-003	34.6826
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**140.0001**	**154.1594**	**0.9812**	**9.3600e-003**	**181.4770**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	10.9635	0.0000	10.9635	0.6479	0.0000	27.1617
Water						0.0000	0.0000		0.0000	0.0000	3.1958	20.8958	24.0916	0.3291	7.9300e-003	34.6826
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**14.1593**	**140.0001**	**154.1594**	**0.9812**	**9.3600e-003**	**181.4770**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Manufacturing	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Manufacturing	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	24.0916	0.3291	7.9300e-003	34.6826
Unmitigated	24.0916	0.3291	7.9300e-003	34.6826

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	10.0733 / 0	24.0916	0.3291	7.9300e-003	34.6826
Total		**24.0916**	**0.3291**	**7.9300e-003**	**34.6826**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	10.0733 / 0	24.0916	0.3291	7.9300e-003	34.6826
Total		**24.0916**	**0.3291**	**7.9300e-003**	**34.6826**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.9635	0.6479	0.0000	27.1617
Unmitigated	10.9635	0.6479	0.0000	27.1617

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	54.01	10.9635	0.6479	0.0000	27.1617
Total		**10.9635**	**0.6479**	**0.0000**	**27.1617**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Manufacturing

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	3.82	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Manufacturing

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	WD_TR	3.82	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Convenience Market

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market (24 Hour)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	WD_TR	737.99	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5736	0.0000	26.5736	1.5705	0.0000	65.8348
Water						0.0000	0.0000		0.0000	0.0000	1.0237	10.1934	11.2171	0.1056	2.5700e-003	14.6222
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5972**	**107.6910**	**135.2882**	**1.6801**	**3.4400e-003**	**178.3158**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5736	0.0000	26.5736	1.5705	0.0000	65.8348
Water						0.0000	0.0000		0.0000	0.0000	1.0237	10.1934	11.2171	0.1056	2.5700e-003	14.6222
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5972**	**107.6910**	**135.2882**	**1.6801**	**3.4400e-003**	**178.3158**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 Hour)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 Hour)	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market (24 Hour)	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 Hour)	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market (24 Hour)	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.2171	0.1056	2.5700e-003	14.6222
Unmitigated	11.2171	0.1056	2.5700e-003	14.6222

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 Hour)	3.2266 / 1.97759	11.2171	0.1056	2.5700e-003	14.6222
Total		**11.2171**	**0.1056**	**2.5700e-003**	**14.6222**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market (24 Hour)	3.2266 / 1.97759	11.2171	0.1056	2.5700e-003	14.6222
Total		**11.2171**	**0.1056**	**2.5700e-003**	**14.6222**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.5736	1.5705	0.0000	65.8348
Unmitigated	26.5736	1.5705	0.0000	65.8348

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 Hour)	130.91	26.5736	1.5705	0.0000	65.8348
Total		**26.5736**	**1.5705**	**0.0000**	**65.8348**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market (24 Hour)	130.91	26.5736	1.5705	0.0000	65.8348
Total		**26.5736**	**1.5705**	**0.0000**	**65.8348**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Convenience Market

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market (24 Hour)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	WD_TR	737.99	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 Hour)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Convenience Market

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market (24 Hour)	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	WD_TR	737.99	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market (24 Hour)	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market (24 Hour)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market (24 Hour)	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Medical_Office_Bldg

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	114.3434	114.3434	4.3100e-003	1.2100e-003	114.8129
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	95.4971	0.0000	95.4971	5.6437	0.0000	236.5900
Water						0.0000	0.0000		0.0000	0.0000	1.7341	13.1812	14.9153	0.1787	4.3200e-003	20.6688
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**97.2312**	**127.5257**	**224.7569**	**5.8267**	**5.5300e-003**	**372.0729**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	114.3434	114.3434	4.3100e-003	1.2100e-003	114.8129
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	95.4971	0.0000	95.4971	5.6437	0.0000	236.5900
Water						0.0000	0.0000		0.0000	0.0000	1.7341	13.1812	14.9153	0.1787	4.3200e-003	20.6688
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**97.2312**	**127.5257**	**224.7569**	**5.8267**	**5.5300e-003**	**372.0729**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	90.1451	90.1451	3.8500e-003	7.7000e-004	90.4708
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	90.1451	90.1451	3.8500e-003	7.7000e-004	90.4708
NaturalGas Mitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
NaturalGas Unmitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	565844	90.1451	3.8500e-003	7.7000e-004	90.4708
Total		**90.1451**	**3.8500e-003**	**7.7000e-004**	**90.4708**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	565844	90.1451	3.8500e-003	7.7000e-004	90.4708
Total		**90.1451**	**3.8500e-003**	**7.7000e-004**	**90.4708**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.9153	0.1787	4.3200e-003	20.6688
Unmitigated	14.9153	0.1787	4.3200e-003	20.6688

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	5.46593 / 1.04113	14.9153	0.1787	4.3200e-003	20.6688
Total		**14.9153**	**0.1787**	**4.3200e-003**	**20.6688**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	5.46593 / 1.04113	14.9153	0.1787	4.3200e-003	20.6688
Total		**14.9153**	**0.1787**	**4.3200e-003**	**20.6688**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	95.4971	5.6437	0.0000	236.5900
Unmitigated	95.4971	5.6437	0.0000	236.5900

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	470.45	95.4971	5.6437	0.0000	236.5900
Total		**95.4971**	**5.6437**	**0.0000**	**236.5900**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	470.45	95.4971	5.6437	0.0000	236.5900
Total		**95.4971**	**5.6437**	**0.0000**	**236.5900**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Medical_Office_Bldg

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Medical_Office_Bldg

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	WD_TR	36.13	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Medical Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Office Bldg

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No onstruction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	11.03	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	114.3434	114.3434	4.3100e-003	1.2100e-003	114.8129
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.2232	0.0000	8.2232	0.4860	0.0000	20.3725
Water						0.0000	0.0000		0.0000	0.0000	2.4562	24.4587	26.9149	0.2533	6.1700e-003	35.0853
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**10.6794**	**138.8032**	**149.4826**	**0.7436**	**7.3800e-003**	**170.2719**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	114.3434	114.3434	4.3100e-003	1.2100e-003	114.8129
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	8.2232	0.0000	8.2232	0.4860	0.0000	20.3725
Water						0.0000	0.0000		0.0000	0.0000	2.4562	24.4587	26.9149	0.2533	6.1700e-003	35.0853
Total	**0.1801**	**0.0222**	**0.0192**	**1.3000e-004**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**0.0000**	**1.6900e-003**	**1.6900e-003**	**10.6794**	**138.8032**	**149.4826**	**0.7436**	**7.3800e-003**	**170.2719**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	90.1451	90.1451	3.8500e-003	7.7000e-004	90.4708
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	90.1451	90.1451	3.8500e-003	7.7000e-004	90.4708
NaturalGas Mitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
NaturalGas Unmitigated	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	453460	2.4500e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1983	24.1983	4.6000e-004	4.4000e-004	24.3421
Total		**2.4500e-003**	**0.0222**	**0.0187**	**1.3000e-004**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**24.1983**	**24.1983**	**4.6000e-004**	**4.4000e-004**	**24.3421**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	565844	90.1451	3.8500e-003	7.7000e-004	90.4708
Total		**90.1451**	**3.8500e-003**	**7.7000e-004**	**90.4708**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	565844	90.1451	3.8500e-003	7.7000e-004	90.4708
Total		**90.1451**	**3.8500e-003**	**7.7000e-004**	**90.4708**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.9149	0.2533	6.1700e-003	35.0853
Unmitigated	26.9149	0.2533	6.1700e-003	35.0853

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	7.74208 / 4.74515	26.9149	0.2533	6.1700e-003	35.0853
Total		**26.9149**	**0.2533**	**6.1700e-003**	**35.0853**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	7.74208 / 4.74515	26.9149	0.2533	6.1700e-003	35.0853
Total		**26.9149**	**0.2533**	**6.1700e-003**	**35.0853**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.2232	0.4860	0.0000	20.3725
Unmitigated	8.2232	0.4860	0.0000	20.3725

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	40.51	8.2232	0.4860	0.0000	20.3725
Total		**8.2232**	**0.4860**	**0.0000**	**20.3725**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	40.51	8.2232	0.4860	0.0000	20.3725
Total		**8.2232**	**0.4860**	**0.0000**	**20.3725**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Office Bldg

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No onstruction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	11.03	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - General Office Bldg

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No onstruction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	11.03	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9869**	**0.1218**	**0.1067**	**7.3000e-004**	**0.0000**	**9.2800e-003**	**9.2800e-003**	**0.0000**	**9.2800e-003**	**9.2800e-003**		**146.1690**	**146.1690**	**2.8200e-003**	**2.6800e-003**	**147.0381**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
NaturalGas Unmitigated	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1242.36	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	1.24236	0.0134	0.1218	0.1023	7.3000e-004		9.2600e-003	9.2600e-003		9.2600e-003	9.2600e-003		146.1594	146.1594	2.8000e-003	2.6800e-003	147.0280
Total		**0.0134**	**0.1218**	**0.1023**	**7.3000e-004**		**9.2600e-003**	**9.2600e-003**		**9.2600e-003**	**9.2600e-003**		**146.1594**	**146.1594**	**2.8000e-003**	**2.6800e-003**	**147.0280**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Pharmacy/Drugstore

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Pharmacy/Drugstore w/o Drive Thru	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	90.06	0.00
tblVehicleTrips	SU_TR	90.06	0.00
tblVehicleTrips	WD_TR	90.06	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5878	0.0000	26.5878	1.5713	0.0000	65.8700
Water						0.0000	0.0000		0.0000	0.0000	0.9736	9.6946	10.6681	0.1004	2.4400e-003	13.9066
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5613**	**107.1921**	**134.7535**	**1.6758**	**3.3100e-003**	**177.6354**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	26.5878	0.0000	26.5878	1.5713	0.0000	65.8700
Water						0.0000	0.0000		0.0000	0.0000	0.9736	9.6946	10.6681	0.1004	2.4400e-003	13.9066
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**27.5613**	**107.1921**	**134.7535**	**1.6758**	**3.3100e-003**	**177.6354**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Pharmacy/Drugstore w/o Drive Thru	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Pharmacy/Drugstore w/o Drive	16.60	8.40	6.90	7.40	73.60	19.00	41	6	53

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Pharmacy/Drugstore w/o Drive Thru	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Pharmacy/Drugstore w/o Drive Thru	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Pharmacy/Drugstore w/o Drive Thru	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.6681	0.1004	2.4400e-003	13.9066
Unmitigated	10.6681	0.1004	2.4400e-003	13.9066

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	3.06869 / 1.88081	10.6681	0.1004	2.4400e-003	13.9066
Total		**10.6681**	**0.1004**	**2.4400e-003**	**13.9066**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	3.06869 / 1.88081	10.6681	0.1004	2.4400e-003	13.9066
Total		**10.6681**	**0.1004**	**2.4400e-003**	**13.9066**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.5878	1.5713	0.0000	65.8700
Unmitigated	26.5878	1.5713	0.0000	65.8700

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	130.98	26.5878	1.5713	0.0000	65.8700
Total		**26.5878**	**1.5713**	**0.0000**	**65.8700**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Pharmacy/Drugstore w/o Drive Thru	130.98	26.5878	1.5713	0.0000	65.8700
Total		**26.5878**	**1.5713**	**0.0000**	**65.8700**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Pharmacy/Drugstore

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Pharmacy/Drugstore w/o Drive Thru	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	90.06	0.00
tblVehicleTrips	SU_TR	90.06	0.00
tblVehicleTrips	WD_TR	90.06	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Pharmacy/Drugstore w/o Drive Thru	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Pharmacy/Drugstore w/o Drive	16.60	8.40	6.90	7.40	73.60	19.00	41	6	53

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Pharmacy/Drugstore w/o Drive Thru	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Pharmacy/Drugstore

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Pharmacy/Drugstore w/o Drive Thru	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	90.06	0.00
tblVehicleTrips	SU_TR	90.06	0.00
tblVehicleTrips	WD_TR	90.06	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Pharmacy/Drugstore w/o Drive Thru	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Pharmacy/Drugstore w/o Drive	16.60	8.40	6.90	7.40	73.60	19.00	41	6	53

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Pharmacy/Drugstore w/o Drive Thru	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Pharmacy/Drugstore w/o Drive Thru	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - R&D

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.6719	0.0000	0.6719	0.0397	0.0000	1.6646
Water						0.0000	0.0000		0.0000	0.0000	6.7950	44.4296	51.2246	0.6998	0.0169	73.7437
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**7.4669**	**163.5339**	**171.0008**	**0.7436**	**0.0183**	**195.0410**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	119.1032	119.1032	4.1000e-003	1.4300e-003	119.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.6719	0.0000	0.6719	0.0397	0.0000	1.6646
Water						0.0000	0.0000		0.0000	0.0000	6.7950	44.4296	51.2246	0.6998	0.0169	73.7437
Total	**0.1819**	**0.0387**	**0.0330**	**2.3000e-004**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**2.9400e-003**	**7.4669**	**163.5339**	**171.0008**	**0.7436**	**0.0183**	**195.0410**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.0293	77.0293	3.2900e-003	6.6000e-004	77.3076
NaturalGas Mitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
NaturalGas Unmitigated	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Research & Development	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Research & Development	788436	4.2500e-003	0.0387	0.0325	2.3000e-004		2.9400e-003	2.9400e-003		2.9400e-003	2.9400e-003	0.0000	42.0740	42.0740	8.1000e-004	7.7000e-004	42.3240
Total		**4.2500e-003**	**0.0387**	**0.0325**	**2.3000e-004**		**2.9400e-003**	**2.9400e-003**		**2.9400e-003**	**2.9400e-003**	**0.0000**	**42.0740**	**42.0740**	**8.1000e-004**	**7.7000e-004**	**42.3240**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	483516	77.0293	3.2900e-003	6.6000e-004	77.3076
Total		**77.0293**	**3.2900e-003**	**6.6000e-004**	**77.3076**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	51.2246	0.6998	0.0169	73.7437
Unmitigated	51.2246	0.6998	0.0169	73.7437

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	21.4182 / 0	51.2246	0.6998	0.0169	73.7437
Total		**51.2246**	**0.6998**	**0.0169**	**73.7437**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	21.4182 / 0	51.2246	0.6998	0.0169	73.7437
Total		**51.2246**	**0.6998**	**0.0169**	**73.7437**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.6719	0.0397	0.0000	1.6646
Unmitigated	0.6719	0.0397	0.0000	1.6646

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	3.31	0.6719	0.0397	0.0000	1.6646
Total		**0.6719**	**0.0397**	**0.0000**	**1.6646**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	3.31	0.6719	0.0397	0.0000	1.6646
Total		**0.6719**	**0.0397**	**0.0000**	**1.6646**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - R&D

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - R&D

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emission analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	1.90	0.00
tblVehicleTrips	SU_TR	1.11	0.00
tblVehicleTrips	WD_TR	8.11	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9968**	**0.2118**	**0.1823**	**1.2700e-003**	**0.0000**	**0.0161**	**0.0161**	**0.0000**	**0.0161**	**0.0161**		**254.1388**	**254.1388**	**4.8900e-003**	**4.6600e-003**	**255.6496**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
NaturalGas Unmitigated	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2160.1	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Research & Development	2.1601	0.0233	0.2118	0.1779	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.1293	254.1293	4.8700e-003	4.6600e-003	255.6394
Total		**0.0233**	**0.2118**	**0.1779**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**		**254.1293**	**254.1293**	**4.8700e-003**	**4.6600e-003**	**255.6394**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Shopping Ctr

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	10.1934	11.2171	0.1056	2.5700e-003	14.6222
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**107.6910**	**117.9995**	**0.6584**	**3.4400e-003**	**135.4837**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	10.1934	11.2171	0.1056	2.5700e-003	14.6222
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**107.6910**	**117.9995**	**0.6584**	**3.4400e-003**	**135.4837**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.2171	0.1056	2.5700e-003	14.6222
Unmitigated	11.2171	0.1056	2.5700e-003	14.6222

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	3.2266 / 1.97759	11.2171	0.1056	2.5700e-003	14.6222
Total		**11.2171**	**0.1056**	**2.5700e-003**	**14.6222**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	3.2266 / 1.97759	11.2171	0.1056	2.5700e-003	14.6222
Total		**11.2171**	**0.1056**	**2.5700e-003**	**14.6222**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.2848	0.5487	0.0000	23.0027
Unmitigated	9.2848	0.5487	0.0000	23.0027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Shopping Ctr

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Shopping Ctr

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS is same as Senate Bill 350 50% RPS 2030 goal

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEMod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2017	11/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Strip Mall

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal.

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	10.1934	11.2171	0.1056	2.5700e-003	14.6222
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**107.6910**	**117.9995**	**0.6584**	**3.4400e-003**	**135.4837**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Energy	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	97.4965	97.4965	4.0700e-003	8.7000e-004	97.8576
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	9.2848	0.0000	9.2848	0.5487	0.0000	23.0027
Water						0.0000	0.0000		0.0000	0.0000	1.0237	10.1934	11.2171	0.1056	2.5700e-003	14.6222
Total	**0.1780**	**3.5000e-003**	**3.4900e-003**	**2.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**10.3085**	**107.6910**	**117.9995**	**0.6584**	**3.4400e-003**	**135.4837**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	93.6843	93.6843	4.0000e-003	8.0000e-004	94.0228
NaturalGas Mitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
NaturalGas Unmitigated	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	71438.4	3.9000e-004	3.5000e-003	2.9400e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8122	3.8122	7.0000e-005	7.0000e-005	3.8349
Total		**3.9000e-004**	**3.5000e-003**	**2.9400e-003**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**3.8122**	**3.8122**	**7.0000e-005**	**7.0000e-005**	**3.8349**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Strip Mall	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Strip Mall	588060	93.6843	4.0000e-003	8.0000e-004	94.0228
Total		**93.6843**	**4.0000e-003**	**8.0000e-004**	**94.0228**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Unmitigated	0.1776	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0800e-003	1.0800e-003	0.0000	0.0000	1.1500e-003
Total	**0.1776**	**0.0000**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0800e-003**	**1.0800e-003**	**0.0000**	**0.0000**	**1.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.2171	0.1056	2.5700e-003	14.6222
Unmitigated	11.2171	0.1056	2.5700e-003	14.6222

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Strip Mall	3.2266 / 1.97759	11.2171	0.1056	2.5700e-003	14.6222
Total		**11.2171**	**0.1056**	**2.5700e-003**	**14.6222**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Strip Mall	3.2266 / 1.97759	11.2171	0.1056	2.5700e-003	14.6222
Total		**11.2171**	**0.1056**	**2.5700e-003**	**14.6222**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.2848	0.5487	0.0000	23.0027
Unmitigated	9.2848	0.5487	0.0000	23.0027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Strip Mall	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Strip Mall	45.74	9.2848	0.5487	0.0000	23.0027
Total		**9.2848**	**0.5487**	**0.0000**	**23.0027**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Strip Mall

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal.

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Long Beach Land Use Elements - Strip Mall

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	43.56	1000sqft	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	351.22	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Electricity assume 2040 RPS goal is same as Senate Bill 350 50% RPS 2030 goal.

Land Use -

Construction Phase - No construction analysis

Off-road Equipment - No construction equipment

Trips and VMT - No construction worker trips

On-road Fugitive Dust - No construction dust

Grading -

Vehicle Trips - No CalEEmod vehicle emissions analysis, refer to separate VMT emission analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOnRoadDust	AverageVehicleWeight	2.40	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	351.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Energy	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.9756**	**0.0192**	**0.0205**	**1.2000e-004**	**0.0000**	**1.4800e-003**	**1.4800e-003**	**0.0000**	**1.4800e-003**	**1.4800e-003**		**23.0356**	**23.0356**	**4.6000e-004**	**4.2000e-004**	**23.1731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/15/2017	11/14/2017	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
NaturalGas Unmitigated	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	195.722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0.195722	2.1100e-003	0.0192	0.0161	1.2000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003		23.0261	23.0261	4.4000e-004	4.2000e-004	23.1629
Total		**2.1100e-003**	**0.0192**	**0.0161**	**1.2000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**		**23.0261**	**23.0261**	**4.4000e-004**	**4.2000e-004**	**23.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Unmitigated	0.9735	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.4200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.5300e-003	9.5300e-003	2.0000e-005		0.0102
Total	**0.9735**	**4.0000e-005**	**4.4200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.5300e-003**	**9.5300e-003**	**2.0000e-005**		**0.0102**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CITY OF LONG BEACH CLIMATE ACTION AND ADAPTATION PLAN GHG EMISSIONS REDUCTION TARGET OPTIONS MEMO

This page intentionally left blank

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: May 22, 2019

TO: Alison Spindler, AICP, Planner & Budget Specialist, City of Long Beach

FROM: Amy Fischer, Principal

SUBJECT: Introduction to the City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo

In 2017, the City of Long Beach began development of a Climate Action and Adaptation Plan (CAAP). The CAAP aims to reduce communitywide GHG emissions, and help the city adapt to future climate change impacts. As part of the CAAP, the City conducted a communitywide GHG inventory to identify its baseline emissions footprint, and is developing business-as-usual forecasts of emissions based on anticipated growth in population, employment, housing, and other factors in the community. In the next stages of the project, the City will establish GHG reduction targets and define local actions to achieve those targets.

The CAAP will provide a framework for creating or updating policies, programs, practices, and incentives for Long Beach residents and businesses to reduce the City's GHG footprint, and ensure the community and physical assets are better protected from the impacts of climate change. The policies, programs, practices, and incentives included in the CAAP will relate to the following:

- Public Health
- Water Supply
- Housing & Neighborhoods
- Coastal Resources
- Parks and Open Space
- Transportation
- Energy
- Wastewater/Stormwater

In preparation of the City's CAAP, baseline (2015) and future year (2040) GHG inventories have been prepared for the City.

For purposes of the EIR analysis, as the horizon year for the proposed project is 2040, the per service population emissions rate is evaluated to a year 2040 efficiency target, which is used to determine project significance for the LUE PEIR as it relates to greenhouse gas impacts. As part of the City's CAAP, although not yet adopted, a GHG Emissions Reduction Target Options Memo (May 2019) was prepared and included six options (Target Options A through F) for achieving GHG reductions at the

local level. Of these six options, three are recommended because they align most closely with the current guidance from the California Air Resources Board (CARB) and the Governor's Office of Planning and Research (OPR). From those three options that follow CARB and OPR guidance most closely, the Target Option D, "Local Emissions Source-Based Intensity Targets" has been identified by the City and its CAAP Scientific Working Group as the preferable target for the purposes of the CAAP. Although another target may ultimately be selected as the CAAP is finalized and adopted, for the purposes of the LUE EIR analysis, Target Option D will be used. Target Option D represents both per capita and per service population[1] emissions targets based on the sub-set of statewide emissions sectors that are included in City's CAAP GHG emissions inventory (for example, sectors such as agriculture that do not existing in the City, and sectors like aviation that the City does not control, are not included). The GHG Emission Reduction Target Options Memo provides the supporting documentation needed as substantial evidence to support the use of the identified targets. As outlined in the GHG Emissions Reduction Target Options Memo, Target Option D takes those sub-sectors and creates an efficiency target based on State GHG reduction goals for 2030 and 2050. Target Option D consists of a 2040 per capita efficiency target of 2.79 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per capita (or MT CO_2e/yr/capita); or expressed another way, 1.92 MT CO_2e per service population, per year. This efficiency metric would achieve per service population emissions align with the State's reduction goals, and would be consistent with the requirements of the Global Covenant of Mayors.

For purposes of this analysis, the total GHG emissions associated with the 2040 With Project Scenario is divided by the total service population associated with the anticipated General Plan buildout to determine whether the proposed project would result in a significant GHG impact.

Attachment: City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo #2 – 2045 Carbon Neutrality (May 2019)

[1] Service Population is the sum of the residential population and workplace employees within the City.

City of Long Beach Climate Action and Adaptation Plan

GHG Emissions Reduction Target Options Memo #2 – 2045 Carbon Neutrality

This memorandum (memo) presents options and considerations for establishing 2030 and 2040 GHG targets and a 2045 aspirational goal in the City's Climate Action and Adaptation Plan (CAAP). The options are informed by State guidance on the topic, science-based guidance, the City's aspirations and priorities, and targets adopted by other local governments in the area.

Establishing local greenhouse gas (GHG) emissions targets can be used to:

- Comply with requirements of the Global Covenant of Mayors, to which the City of Long of Beach has been a signatory since 2015,
- Demonstrate the City's commitment to global efforts on climate change,
- Illustrate the relationship between the City's reduction target and the State's own reduction goals,
- Provide a goal post against which to evaluate the cumulative progress of the City's GHG reduction actions over time, and
- Demonstrate a level of GHG emissions below which the City would have less than cumulatively considerable GHG impacts.[1]

We have prepared this memo so that portions of the first section can be included in the CAAP document (with minor narrative revisions), and the second, more technical section can be potentially included as a Target-Setting Considerations Appendix to the CAAP in support of the environmental review analysis.

Section 1 – GHG Target Considerations and Options

A. Introduction

In 2017, the City of Long Beach began development of a Climate Action and Adaptation Plan (CAAP). The CAAP aims to reduce communitywide GHG emissions, and help the city adapt to future climate change impacts. As a first step, the City conducted a communitywide GHG inventory to identify its baseline emissions footprint, and developed business-as-usual forecasts of emissions based on anticipated growth in population, employment, housing, and other factors in the community. In the next stages of the project, the City will establish GHG reduction targets and define local actions to achieve those targets.

While there will be fiscal, economic, and public health benefits, one of the CAAP's primary purposes is to reduce GHG emissions. GHG targets serve as aspirational metrics to help focus local actions to achieve that end. Establishing clear and attainable targets can also motivate community members and City staff, help guide long-term strategies, and increase transparency and accountability regarding the CAAP's objectives.

There are several questions to consider when defining local GHG targets.

- **What type of targets can be used?**

  Targets can be set based on absolute emissions reductions or to reflect emissions intensity improvements in the community.

[1] *The City's target, along with reduction strategies necessary to achieve this target will facilitate tiering and streamlining for proposed projects under the provisions of CEQA Guidelines Section 15183.5.*

- **What guidance is available to direct local governments in setting GHG targets?**

  California has established several statewide GHG targets through legislative action that can help to inform local GHG target selection. State agencies, including the California Air Resources Board (ARB) and the Governor's Office of Planning and Research (OPR), have also issued guidance to local governments on this topic. The California Environmental Quality Act (CEQA) Guidelines also provide guidance on target selection for cities that would use their GHG reduction strategy to streamline environmental review for future development projects.

- **What does the climate science say?**

  According to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), targets adopted to reduce GHG emissions are "science-based" if they are consistent with the magnitude of emission reductions required to limit the increase of global temperatures to 2°C above pre-industrial temperatures. Based on the IPCC's *Special Report: Global Warming of 1.5°C* from 2018, scenarios to avoid overshoot of the 2°C target should reduce CO_2 emissions 25% by 2030 and reach net zero emissions around 2070; to achieve no or limited overshoot of the 1.5°C target, net zero emissions should be achieved globally around 2050.[2]Timing of the reductions is also important. The report notes that "every year's delay before initiating emission reductions decreases by approximately two years the remaining time available to reach zero emissions on a pathway still remaining below 1.5°C."[3]

- **What is the City's emissions profile?**

  The City's 2015 emissions inventory totals 3.1 million metric tons of carbon dioxide equivalent (MMT CO_2e)[4] with the majority coming from transportation (50%) and building energy use (44%). A communitywide GHG reduction target should take into account the sources of emissions and a city's ability to influence its emission sources.

- **What are the City's aspirations and commitments?**

  The City is a leader in environmental sustainability initiatives, including:

  - In 2015, Mayor Robert Garcia signed the Compact of Mayors (now the Global Covenant of Mayors) to join the world's largest coalition of city governments to address climate change.[5]
  - In 2017, Mayor Garcia joined 406 mayors across the United States in pledging to continue the goals of the Paris Climate Agreement to make sustainable changes to limit global temperature rise to well below 2°C.[6]
  - In 2019, Mayor Garcia encouraged the City to achieve a carbon neutrality goal by 2045, consistent with Executive Order B-55-18

  The CAAP is intended to chart a pathway to help the City fulfill these commitments.

- **What timeframe should the targets address?**

  Near- and mid-term targets can be useful in setting the City on a pathway toward more aggressive longer-term targets. The specific target years can be chosen based on California's GHG targets, local planning priorities (such as the City's General Plan), or other considerations.

---

[2] *IPCC. Special Report, Global Warming of 1.5°C, Summary for Policy Makers. Available: https://www.ipcc.ch/sr15/*

[3] *ibid. Chapter 1, Section 1.2.3.1, page 61.*

[4] *The City's GPC Basic inventory totals 3.1 million MT CO_2e/yr. The City also calculated several GPC Basic+ emissions sources to provide a more complete picture of community emissions, which brings the total emissions to 3.3 million MT CO_2e/yr. However, for CAAP purposes, the City has established GHG targets and actions based on the GPC Basic inventory, since these emissions represent sources over which the City has more direct control.*

[5] *City of Long Beach Press Release "What is Long Beach doing about Climate Change" (11/10/2015) Available: http://www.longbeach.gov/mayor/news/compact/*

[6] *City of Long Beach Press Release "Long Beach Joins Paris Agreement" (06/02/2017) Available: http://www.longbeach.gov/mayor/news/long-beach-joins-paris-agreement/*

- **What kind of targets are other local governments in the area using?**

  Long Beach is not acting alone in its efforts to reduce GHG emissions, and the targets of other local governments can also help to inform the City's own target selection process. Table 3 presents a sample of other local governments' GHG targets.

B. Target Types

GHG targets can be expressed as either ***mass emissions*** targets or ***emissions intensity*** targets.

Mass Emissions Targets

Mass emissions targets establish an absolute emissions level to be achieved by a target year, such as 100,000 metric tons of carbon dioxide equivalent per year (MT CO_2e/yr) by 2020. Typically, mass emissions targets are expressed as a percent below the emissions level of some base year, such as 80% below 1990 emissions by 2050. Mass emissions targets are often used in the context of deep GHG reductions or carbon neutrality, described in detail below.

Deep GHG Reduction Targets

This term refers to the common long-term GHG reduction target set by cities, aiming to reduce emissions to approximately 80% below baseline levels by 2050 in order to limit the global temperature increase to less than 2°C compared to pre-industrial temperatures. Many cities leading the effort on GHG mitigation set this long-term target at the start of their climate planning processes (and since that time, some of these same cities have revised their long-term targets to aim for carbon neutrality, as described below). Sometimes, this type of target is also referred to as a ***climate***-neutral target, as it is intended to neutralize the adverse impacts of climate change. The distinction between a climate-neutral target and a zero carbon or a net zero carbon target is noteworthy. While the term "climate-neutral" may be useful for marketing and communication purposes, and while the actions necessary to achieve this target certainly need to be ambitious, this term should not be confused with a zero carbon or net zero carbon target, which requires bold and systemic changes to core city transportation, buildings, and waste systems at a level beyond deep carbon reductions.

Carbon Neutrality Targets

In describing community GHG emissions, the term 'carbon neutrality' is often used interchangeably with 'zero carbon emissions', and 'net zero carbon emissions'. It is important to clarify and define each of these terms.

Zero Carbon Emissions: In its strictest sense, this term refers to a scenario under which a city completely eliminates all sources of direct GHG emissions associated with its activities. While theoretically possible, this type of target is very challenging to achieve due to the fact that some sources of GHG emissions are near impossible to eliminate. Even if a community were to power its built environment and transportation sectors with 100% renewable energy, some GHG emissions from wastewater treatment, solid waste management, refrigeration, or fire suppression are not currently feasible to eliminate. It is worth noting that based on our review of best practices, no city has yet endeavored to establish a goal to achieve zero carbon emissions in the strictest sense of the definition.

Net Zero Carbon Emissions: This term means that the ***net*** GHG emissions associated with a city are zero. Under this scenario, some residual emissions may be produced by a community each year, but they can be fully balanced by investing in offsetting activities such as generating additional renewable energy and providing it to consumers outside the community, biological carbon sequestration, green procurement strategies, or the purchase of verifiable carbon credits.

Intensity–Based Emissions Targets

Emissions intensity thresholds set a target level of emissions per population or per service population (i.e., local residents plus local jobs), such as 2.25 MT CO_2e per service population per year (MT CO_2e/SP/yr) by 2035. Intensity thresholds demonstrate a community's ability to grow population and employment, while emissions shrink on a per-unit basis; in effect, a community could be growing more efficiently from an emissions standpoint. In this case, total emissions within a community may increase while still achieving an intensity target, as long as service population is growing faster than emissions.

Mass emissions and intensity-based targets are both useful to consider when evaluating appropriate emissions reduction targets, and OPR suggests that local governments consider both types in their climate action plans.

Mass or Intensity-based Activity-Specific Targets

While the types of targets described above focus on GHG emissions as a metric for measurement of progress, leading cities are also adopting goals that focus specifically on the activities causing GHG emissions, such as energy consumption in the building and transportation sectors or solid waste generation. These activity-specific targets can be helpful in communicating the City's GHG goals more clearly and tracking progress within individual activities or sectors. However, they should not be used as a replacement for an overarching communitywide GHG target that covers all sectors and emissions activities because it can be difficult to understand how a specific activity target relates to total communitywide emissions. This can be especially problematic when using a CAP to support CEQA streamlining for future projects where it is difficult to demonstrate how achievement of an activity target results in a less than cumulatively considerable impact to GHG emissions.

Mass Targets Related to Net-Zero Fossil Fuel Consumption or 100% Renewable Energy Use: This type of target focuses on the activity that generates the majority of overall GHG emissions at the community level – fossil fuel combustion for energy generation used in buildings, vehicles, and equipment. Some cities use this target because they believe it is easier to understand than a GHG reduction target, and is therefore more inspirational than a GHG reduction target. Some cities have applied this target strictly to electricity generation or related to a specific sector (like transportation), while others intend it to be used for all fuel sources.

Intensity-based Activity Targets or Budgets: Using the concept of intensity-based targets, many cities have applied these targets to key consumption activities in daily urban life to create a "budget", such as reducing per-capita electricity consumption or driving by a certain percent by a future year. These forms of targets can make it easier to communicate the role of individual community members in reducing GHG emissions and achieving targets.

C. Guidance on Local Government Target Setting

Guidance on local government target setting in California is primarily based on three sources: the State's own GHG targets, ARB's Climate Change Scoping Plan (Scoping Plan), and OPR's General Plan Guidelines. Together, these sources help to frame the context for local GHG targets. For climate action plans that are designed to provide CEQA streamlining for future projects, precedent case law is another source of guidance for reduction targets, although this guidance is primarily based on the State's legislative GHG reduction targets.

State GHG Targets

California's statewide GHG targets are defined through adopted legislation (2020 and 2030 target years) and Executive Orders (2045 and 2050 target year), as shown in Table 1.

Table 1 State of California Greenhouse Gas Targets		
Target Year	**Target**	**Corresponding Legislation**
2020	Return to 1990 GHG levels by 2020	Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006
2030	40% below 1990 levels by 2030	Senate Bill (SB) 32, the Global Warming Solutions Act of 2006
2045	Carbon neutrality by 2045	Executive Order (EO) B-55-18 of 2018
2050	80% below 1990 levels by 2050[7]	EO S-3-05 of 2005

Some cities have simply adopted the State's exact targets, and others have calculated variations of them to more accurately reflect local demographic and economic conditions. There are four primary considerations when using the State's targets as the basis for local targets:

1. How can 1990 emissions levels be approximated locally?
2. What is the local baseline year?
3. What emissions will be analyzed locally?
4. What degree of influence does the City have over different emissions sources?

Section 2 of this memo provides the supporting calculations to estimate local emissions targets based on the State's GHG targets. Following is a discussion oriented around these four questions related to the direct use of the State's reduction targets.

Approximate 1990 Emissions Levels

The State's GHG targets have been established as mass emissions targets and are often referenced in local government target setting. However, the State's specific targets are each benchmarked to a 1990 GHG inventory, and, for most local governments, it is technically challenging to back-cast an inventory for that year. Guidance in ARB's 2008 Climate Change Scoping Plan identified local governments as "essential partners" in achieving the State's GHG goals, and encouraged adoption of local GHG targets "…that parallel the State's commitment to reduce greenhouse gas emissions by approximately 15% from current levels by 2020." Many local governments followed this guidance for their near-term target as a way to approximate a return to 1990 levels (i.e., the State's GHG target for 2020). This helps to explain why many climate action plans in California have a 2020 target defined as 15% below baseline levels.

Consider the Local Baseline Year

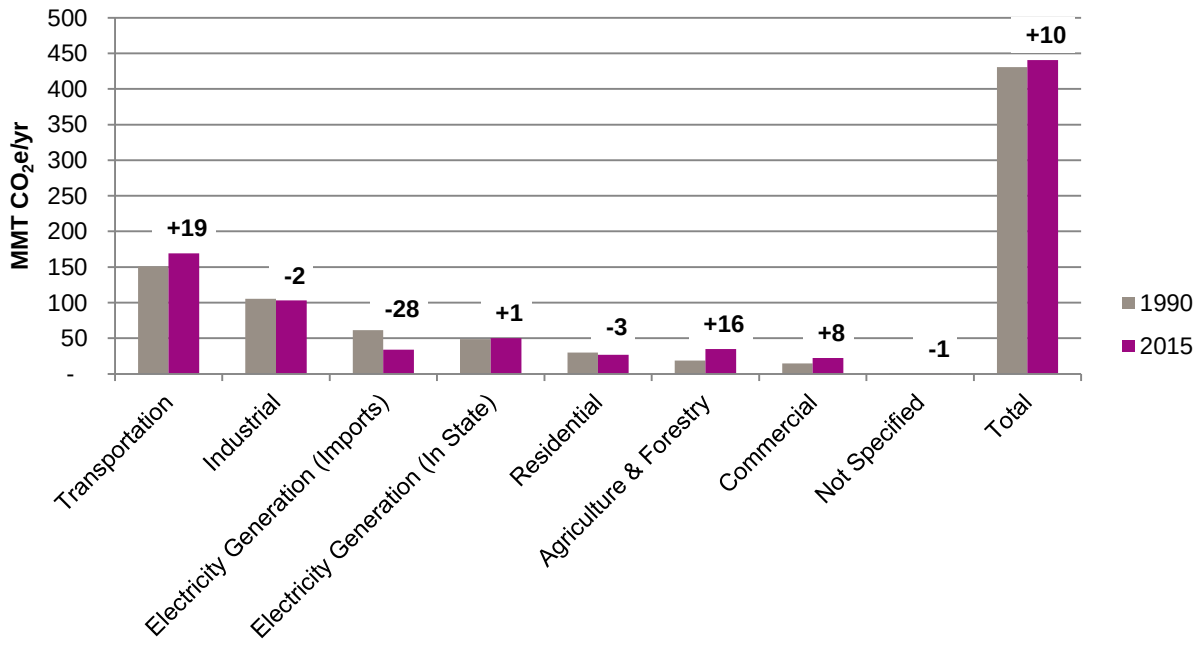
It is worth noting that the original guidance suggesting a 15% reduction below current GHG levels approximates a return to 1990 levels was based on an earlier version of the State's emissions forecasts. Following release of the aforementioned guidance, the 2008 economic recession occurred, resulting in slower emissions growth statewide than previously anticipated. Further, the 15% reduction target value was calculated relative to a 2008 baseline year. For cities with different baseline inventory years, the corresponding 2020 target value would be slightly different. ARB also subsequently revised the statewide 1990 inventory, which altered some of the underlying calculations associated with the 1990 target value.

[7] *The State's 2050 target was based on leading research at the time published by the IPCC regarding the emissions reductions required of developed countries to stabilize atmospheric carbon dioxide levels at approximately 450 parts per million (ppm) setting an upper limit to global temperature increase to 2° Celsius or less to avoid catastrophic impacts of global climate change. See United Nations International Panel on Climate Change, Fourth Assessment Report: Working Group III, Mitigation of Climate Change, 2007. Available: https://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch13-ens13-3-3-3.html*

Based on the State's current 1990 inventory (and therefore, its 2020 target emissions level) and the 2015 statewide inventory, statewide emissions reductions of 2.4% below 2015 levels would be required to return to 1990 emissions levels. This value reflects the substantial success of emissions-reduction programs implemented across California since the adoption of AB 32. It also highlights the need to thoughtfully consider the selection of local GHG reduction targets with respect to now outdated guidance for local governments

Figure 1 shows how the statewide emissions have changed since 1990. Emissions increases are primarily attributed to the transportation and agriculture & forestry sectors while substantial emissions reductions occurred in the imported electricity sector during the same period.

Figure 1 – Statewide Emissions Change by Sector[8]



Evaluate Local Emissions Sources

As a final consideration for the State's GHG targets, it is important to understand the sources of emissions included in the statewide inventory and how they differ from the sources typically represented at the community inventory level. Certain emissions sectors are not included or applicable locally, but are included statewide based on the prevailing GHG inventory methodologies. For example, industrial process-related emissions occur within California and are included in the statewide inventory, but these same sources do not occur locally in all jurisdictions and so would not be represented in all communitywide inventories. In addition, some emission sources that may have a local presence are outside the control of local lead agencies – for example, some industrial emissions sources are the purview of the air quality management district, and not the municipality. Therefore, the State's GHG targets should also be customized for use locally in a way that considers the presence or absence of certain emissions sectors and relative degree of municipal influence. This can be achieved by analyzing the sub-set of emissions sectors that will be included in the local GHG inventory. Section 2 presents the

[8] *Figure 1 shows the 1990 and 2015 emissions inventory results organized by economic sector categorization. 1990 inventory available: https://www.arb.ca.gov/cc/inventory/1990level/1990data.htm; 2015 inventory available: https://www.arb.ca.gov/cc/inventory/data/data.htm*

results of this customization analysis specific to Long Beach, should the City choose to define local targets based on the State's adopted targets.

Tailoring the reduction target to the specific local context also speaks to the direction from the California Supreme Court's 2015 decision in *Center for Biological Diversity v. California Department of Fish and Wildlife*,[9] commonly referenced as "Newhall Ranch." In Newhall Ranch, the Court indicated that the use of a State legislation-based GHG emissions significance threshold could be acceptable, so long as the administrative record supports how this threshold is appropriate for a specific project at a specific location.[10] Section 2 provides further detail on tailoring State guidance to local conditions.

ARB Climate Change Scoping Plan – 2008 and 2017

The 2008 Scoping Plan was developed to establish the State's pathway toward achievement of the AB 32 GHG target (i.e., return to 1990 levels by 2020). Within that document, ARB's original guidance to local governments was to adopt a GHG target of 15% reduction below current levels by 2020. Since publication of the 2008 Scoping Plan, SB 32 was adopted (2016) and directed a statewide 2030 GHG target (i.e., 40% below 1990 levels by 2030). ARB subsequently finalized a revised Scoping Plan in November 2017 to establish an achievement pathway for this new 2030 target.

The *2017 Climate Change Scoping Plan* provides the following updated guidance on target-setting for local governments:

> *"Recommended Local Plan-Level Greenhouse Gas Emissions Reduction Goals*
>
> CARB recommends statewide targets of no more than six metric tons CO_2e per capita by 2030 and no more than two metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer term State emissions reduction goal of 80% below 1990 levels by 2050.
>
> …CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40% and 80%, respectively) to the State's 1990 emissions limit established under AB 32. **Emissions inventories and reduction goals should be expressed in mass emissions, per capita emissions, and service population emissions**. To do this, local governments can start by developing a community-wide GHG emissions target consistent with the accepted protocols as outlined in OPR's General Plan Guidelines Chapter 8: Climate Change. They can then calculate GHG emissions thresholds by applying the percent reductions necessary to reach 2030 and 2050 climate goals (i.e., 40% and 80%, respectively) to their communitywide GHG emissions target. Since the statewide per capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the State, it is appropriate for local jurisdictions to derive evidence-based local per capita goals based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets. The resulting GHG emissions trajectory should show a downward trend consistent with the statewide objectives"[11]

---

[9] *62 Cal. 4th 204.*

[10] *Id. at 225-228 (EIR must compare the specific project's expected emissions to the existing physical environment in the project's vicinity – at a specific location - rather than a hypothetical business as usual (BAU) scenario based on statewide assumptions).*

[11] *California Air Resources Board. The 2017 Climate Change Scoping Plan, page 148. Available: https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf. Accessed November 10, 2017.*

This guidance recommends use of an intensity target approach to derive local GHG targets for 2030 and 2050 target years, and suggests that local governments that had been using a 2020 target and planning horizon should update to targets that are focused on the 2030 and 2050 State goals:

> "Numerous local governments in California have already adopted GHG emissions reduction goals for year 2020 consistent with AB 32. CARB advises that local governments also develop community-wide GHG emissions reduction goals necessary to reach 2030 and 2050 climate goals. Emissions inventories and reduction goals should be expressed in mass emissions, per capita emissions, and service population emissions."[12]

The 2017 Scoping Plan recommends use of emissions intensity metrics to develop GHG targets for 2030 and beyond, and refers to OPR's recommendation that local governments define mass and intensity targets for the GHG reduction analyses. It also states that use of such targets as defined therein is consistent with the State's GHG goals, as well as the recently signed Under 2 MOU[13] international agreement and the Paris Agreement.[14]

Office of Planning and Research (OPR) General Plan Guidelines

OPR recently updated the General Plan Guidelines, including a chapter on climate change that describes target-setting considerations for local governments.[15] The Guidelines suggest that target setting should be context-specific and tailored to a community's unique characteristics, while generally relating to the State's GHG targets. The Guidelines refer readers to ARB's guidance for local action, and also recommend analyzing a community's mass emissions and emissions intensity to support a fuller understanding of the issue. It is worth noting that OPR's guidance **does not** define required targets for local governments to include in their CAPs.

D. Climate Science-Driven Targets

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) stipulates that targets adopted to reduce GHG emissions are "science-based" if they are consistent with the magnitude of emission reductions required to limit the increase of global temperatures to 2°C above pre-industrial temperatures. From a policy perspective, this was interpreted as a need to reduce emissions by at least 80% below 1990 baseline levels by 2050 (this is also California's 2050 statewide GHG target expressed in EO-S-3-05).

In late 2015, advisory bodies to the IPCC reported that limiting the average global temperature increase to 2°C may not be adequate, as a 2°C increase would still result in irreparable damage to ecosystems, food security, and sustainable development in the world's most vulnerable communities, particularly small island nations and low-lying plains. They proposed an aspirational target to limit the average global temperature increase to 1.5°C to avoid the most severe impacts to these geographies. This latest literature suggests the need for a more significant magnitude of GHG reductions by cities in the developed world. In order to achieve the targets in the Paris Agreement, global "net-zero" emissions

---

[12] *California Air Resources Board. The 2017 Climate Change Scoping Plan, page 149. Available: https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf. Accessed November 10, 2017.*

[13] *The Under 2 Memorandum of Understanding (MOU) is a subnational climate agreement developed by the Under2 Coalition to limit global temperature increases to less than 2°C through agreements from signatories to reduce their GHG emissions to 80-95% below 1990 levels by 2050 or limit to 2 MT CO_2e/capita per year by 2050. Available: http://under2mou.org/*

[14] *The Paris Agreement is an international agreement developed through the United Nations Framework Convention on Climate Change to keep global temperature rise this century below 2°C, and pursue efforts to limit temperature increases to 1.5°C. The Paris Agreement is based on nationally determined contributions to achieve its goal, which represent the ratifying parties best efforts toward addressing climate change. Available: http://unfccc.int/paris_agreement/items/9485.php*

[15] *The Governor's Office of Planning and Research. General Plan Guidelines, Chapter 8 Climate Change. Available: https://www.opr.ca.gov/docs/OPR_C8_final.pdf*

much be reached to maintain global temperature rise below 1.5°C. The Paris Agreement (Article 3.1) states that "Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof." As developed nations have a greater capacity to achieve such reductions given access to resources and existing quality of life, there is much incentive for such nations to drive the net-zero emissions reduction model.

As the majority of GHG emissions generated in Long Beach result from transportation (50%) and building energy use (44%), it is important to address the connection between climate forcers such as CO_2 and CH_4 (methane) and criteria air pollutants such as NO_x and Volatile Organic Compounds (VOCs) when considering GHG reduction target-setting and climate science. Interactions between criteria pollutants and climate exist within the atmosphere, which worsen the effects of greenhouse gases and contribute to increased background levels of criteria pollutants. An example from the South Coast Air Quality Management District 2016 Air Quality Management Plan describes the interaction of methane with criteria pollutants. As methane reacts with criteria air pollutants in the atmosphere, it begins to behave like a VOC and increases background tropospheric ozone levels, which in turn makes achievement of air quality standards more difficult. Further, according to the IPCC (AR5 2013) tropospheric ozone is also one of the most reactive and significant of the short-lived climate pollutants. This example illustrates the interconnection between GHG emissions and air quality, and indicates one of the myriad opportunities for co-benefits associated with climate action planning.[16]

E. City's Emissions Profile

As shown in Table 2 below, the City's 2015 total GPC Basic emissions were 3.1 million metric tons of CO_2e with the majority coming from transportation (50%) and building energy use (44%). The remaining 6% comes from solid waste and wastewater.

Table 2
City of Long Beach 2015 Greenhouse Gas Inventory

Sector	MT CO_2e/yr	%
Energy	**1,377,291**	**44%**
Residential	428,245	14%
Commercial	300,818	10%
Manufacturing/Construction	399,089	13%
Energy Industries	219,899	7%
Fugitive Emissions (oil/natural gas)	29,240	1%
Transportation	**1,546,326**	**50%**
On-road Transportation	1,213,601	39%
Railways	11,883	<1%
Waterborne Navigation	301,345	10%
Aviation	4,550	<1%

[16] *South Coast AQMP 2016 Chapter 10, pg 2*

Table 2 City of Long Beach 2015 Greenhouse Gas Inventory		
Sector	**MT CO_2e/yr**	**%**
Off-road Transportation	14,947	<1%
Waste	**176,851**	**6%**
Solid Waste	173,259	6%
Wastewater	3,592	<1%
Total	**3,100,468**	**100%**

The source of emissions should be considered during target setting since the City has more influence over some sources than others. For example, local building codes can be designed to reduce energy emissions from residential and commercial buildings, or incentive programs could be designed to trade in less efficient personal vehicles for high-efficiency or alternative fuel vehicle options. In contrast, a local government might have limited ability to influence technologies or fuels used in the aviation sector. These considerations are especially important for cities considering a net-zero or carbon neutrality GHG target; emissions sources that cannot be reduced would need to be offset in other ways in order to demonstrate target achievement.

F. City's Aspirations and Commitments

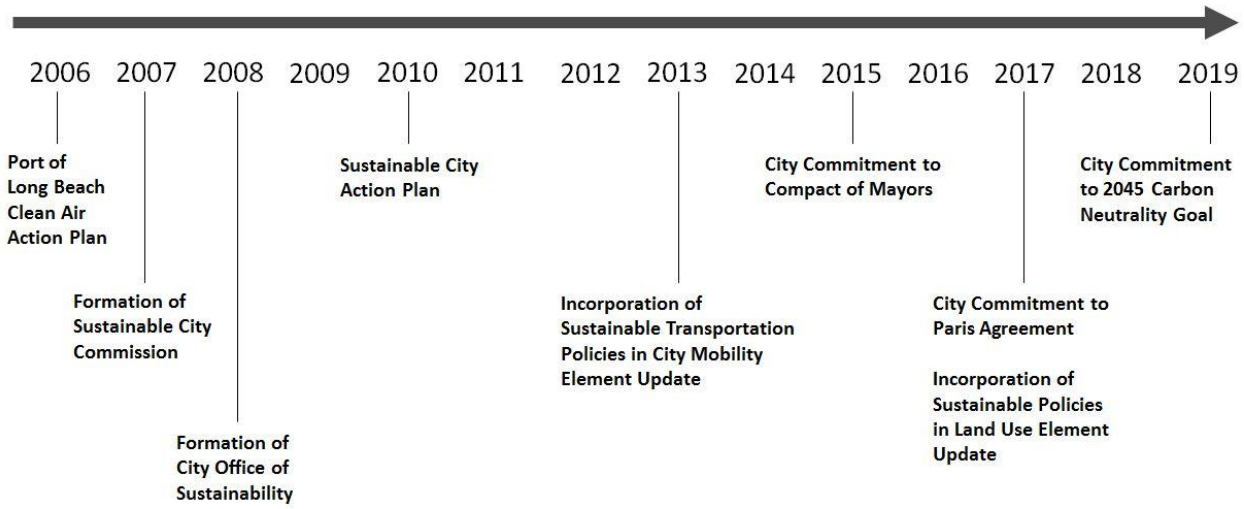
The City's aspirations for climate action and its past and planned commitments for local action should also be considered when defining a local reduction target because they illustrate the local political will and policy framework that can enable continued action in the future. The City of Long Beach has been an early adopter of sustainability planning, including through the following examples of local action:

- 2006: City implements the Port of Long Beach Clean Air Action Plan
- 2007: Formation of the Long Beach Sustainable City Commission
- 2008: Formation of the City Office of Sustainability
- 2010: Development of the Sustainable City Action Plan
- 2013: Incorporation of Sustainable Transportation Policies into City of Long Beach Mobility Element Update
- 2015: Mayor Robert Garcia signs the Compact of Mayors (now the Global Covenant of Mayors) to join the world's largest coalition of city governments to address climate change[17]
- 2017: Mayor Garcia joins 406 mayors across the United States in pledging to continue the goals of the Paris Climate Agreement to make sustainable changes to limit global temperature rise to well below 2°C[18]; City begins development of the CAAP to define a pathway that help the City fulfill its climate commitments; Incorporation of Sustainable Policies in Land Use Element Update
- 2019: Mayor Garcia encourages the City to achieve a 2045 carbon neutrality goal

[17] *City of Long Beach Press Release "What is Long Beach doing about Climate Change" (11/10/2015). (Accessed 07/02/2018). Available: http://www.longbeach.gov/mayor/news/compact/*

[18] *City of Long Beach Press Release "Long Beach Joins Paris Agreement" (06/02/2017). (Accessed 07/02/2018). Available: http://www.longbeach.gov/mayor/news/long-beach-joins-paris-agreement/*

Figure 2 – Timeline of Long Beach Sustainability Activities



The City has also enacted several local initiatives (or planning to support these local actions) that will result in GHG reductions and contribute to the GHG targets defined in the CAAP, including[19]:

- Electric car charger giveaways
- Green Port Policy of zero emission cargo-handling equipment by 2030 and zero emission trucks by 2035 (Clean Air Action Plan)[20]
- Planting 6,000 new trees by 2020
- Addition of 2 megawatts (MW) of solar power at city facilities by 2020
- Expansion of bicycle and pedestrian infrastructure
- Conversion of all street lighting to energy efficient LEDs
- All new City government and major private development buildings designed to LEED standards
- Over 5,000 water and energy saving Lawn-to-Garden transformations already completed
- Transit-oriented development to guarantee sustainable housing projects

G. Target Timeframes

Local GHG targets can be set to align with various objectives, such as State GHG goals, local funding cycles, or long-term planning horizons. From an implementation standpoint, most CAPs are designed with near-term (5-10 years), medium-term (10-20 years), and long-term (20+ year) targets to provide waypoints for progress tracking. With this approach, it is helpful to identify the final target (long-term target) up front, and then set a series of interim targets (near- and medium-term targets) that lead to it. This ensures that near-term targets are aggressive enough to make progress toward the long-term target, and supports strategic thinking on early-action items that will provide long-term benefits.

Alternatively, some cities have found success in focusing intently on near-term targets and actions that can be achieved in one political or funding cycle. For example, the city of Chicago sets 5-year targets in its Sustainability Plan, tracks and analyzes progress during that timeframe, and then sets new 5-year

[19] *City of Long Beach Press Release "Long Beach Joins Paris Agreement" (06/02/2017). (Accessed 07/02/2018). Available: http://www.longbeach.gov/mayor/news/long-beach-joins-paris-agreement/*

[20] *"LA and Long Beach mayors sign pact setting zero-emissions goals for ports" (06/12/2017). Los Angeles Times. (Accessed 07/02/2018). Available: http://www.latimes.com/local/california/la-me-ports-clean-air-20170612-story.html*

targets to incrementally push the city forward. Chicago does have an overarching long-term GHG target (80% below 1990 levels by 2050), but the connection between the 5-year targets and the 2050 target is not explicitly defined, such that achievement of the near-term targets does not necessarily indicate the city is on track to achieve its long-term target. It's important to note however that Chicago's context is different from that established in California through AB 32, SB 32, and Court rulings related to CEQA, and the State's legislative framework for GHG emissions impacts.

California's GHG target years are 2020, 2030, and 2045/2050.[21] Given the proximity to the State's 2020 target year, CAAP target years for 2030 and 2040 are tentatively proposed to allow the City time to establish and achieve the most meaningful GHG reduction targets. An aspirational 2045 goal is also included to provide a long-term vision that underpins the nearer-term targets and aligns with the Mayor's recent guidance to strive for carbon neutrality by 2045. The 2030 and 2045 target years would link the City's targets directly to the State's GHG planning timeframe, while the 2040 target year aligns with the Long Beach General Plan horizon year, which can be beneficial when developing the CAAP's environmental review document for CEQA compliance.

H. Other Local Government Targets

In addition to the guidance provided by State agencies, it can be helpful to consider the GHG targets of other local governments when defining a target because it reinforces the notion that cities are not acting alone, and therefore, are not putting themselves at a regional economic disadvantage through their climate change response. It is also important to consider the context of other cities' targets, including their baseline year, the types of reduction strategies included in their plans, and how they treat statewide actions, when referencing them as the basis for local target setting.

Table 3 shows different GHG targets from other local governments in the California.

Table 3
Other Local Government Greenhouse Gas Targets

City Name (CAP Year)	Target Type	Target Year				
		2020	2025	2030	2035	2050
City of LA (2017)	Mass emissions	Achieve 1990 levels	45% below 1990 levels	-	60% below 1990 levels	80% below 1990 levels[22]
County of LA (2015)	Mass emissions	11% below 2010 levels	-	-	-	-
City of Glendale (2012)	Mass Emissions	8% from 2005 levels	-	-	13% from 2005 levels	-
City of Santa Monica (2015)	Mass Emissions	20% below 1990 levels	-	30% below 1990 levels	-	80% below 1990 levels[23]

[21] *Executive Order S-3-05 from 2005 set a 2050 GHG target of 80% below 1990 levels. More recently, EO B-55-18 has set a target of carbon neutrality by 2045. Neither Executive Order represents a GHG target codified by the legislature, as with the targets established in AB 32 (return to 1990 levels by 2020) and SB 32 (40% below 1990 levels by 2030).*

[22] *The City is currently evaluating GHG reduction pathways to achieve carbon neutrality by 2050*

[23] *The Mayor has stated the City's commitment to achieving carbon neutrality by 2050: https://www.santamonica.gov/blog/santa-monica-commits-to-uphold-paris-climate-agreement-goals*

Table 3 Other Local Government Greenhouse Gas Targets						
City Name (CAP Year)	**Target Type**	**Target Year**				
		2020	**2025**	**2030**	**2035**	**2050**
City of Pasadena (2018)	Mass Emissions	27% below 2009 levels (14% below 1990 levels)	-	49% below 2009 levels (40% below 1990 levels)	59% below 2009 levels (52% below 1990 levels)	83% below 2009 levels (80% below 1990 levels)
City of San Diego (2016)	Mass Emissions	15% below 2010 levels	-	40% below 2010 levels	50% below 2010 levels	-
City of Oakland (2018)	Mass Emissions	-	-	56% below 2005 levels	-	83% below 2005 levels
City of San Francisco (2013)	Mass emissions	-	-	40% below 1990 levels	-	80% below 1990 levels

As shown in the examples above, most of the communities established a mid-term target for 2030 or 2035, and five have set long-term targets aligned with the previous statewide 2050 target (set in Executive Order S-3-05). In addition, the Cities of Los Angeles and Santa Monica are considering carbon neutrality targets, though neither has formally adopted such targets yet. It is worth noting that none of the communities shown above have selected an emissions intensity target. This may be due to the fact that many of the reference CAPs were prepared prior to the 2017 Scoping Plan Update and OPR's General Plan Guidance, which both reference intensity targets as acceptable options for local governments and recommend their use along with mass emissions targets to present a holistic understanding of emissions in the community. This does not suggest that Long Beach could not adopt an intensity target, but it indicates that it might be useful to include mass emissions targets as well to better support comparisons with neighboring communities' commitments.

I. 2030 and 2040 Target Options for Long Beach

Table 4 on the following pages presents several target options for the 2030 and 2040 planning years. At this time, we do not recommend including a 2020 target for analysis since the CAAP is a long-term planning document that will not be finalized until it is nearly 2020. In one instance, a 2020 target is included as a reference because the subsequent targets are based upon it.

Target Options A through E include a set of local targets derived from the State's adopted 2030 GHG target and the direction from EO S-3-05 to achieve statewide reductions of 80% below 1990 levels by 2045. Calculating the 2040 interim targets based on these two State targets is consistent with the local government guidance in the 2017 Scoping Plan. Target Option F represents a linear trajectory from the 2015 base year emissions to the 2045 carbon neutrality goal. Relevant considerations are provided for each option in order to describe whether the potential targets might be appropriate for use at the local level.

We preliminarily recommend the targets shown in Target Options B, D, and E for the City's CAAP because they align with the most current guidance from ARB, OPR, and indirectly with the California Supreme Court's Newhall Ranch decision[24]; are tailored to match the emissions sectors included locally in the City's inventory; and provide an easy calculation metric for tracking future target progress. Target Option B would result in absolute emissions reductions because it is framed as a mass emissions target, corresponds with the Paris Agreement's goal based on its relationship to California's 2050 GHG target, and would support CEQA streamlining benefits for new development. Target Options D and E would result in reduced emissions intensity (e.g., tons per capita), and are assumed to result in mass emissions reductions based on the population and employment forecasts envisioned in the City's General Plan Update.[25] These targets are also based on California's 2050 GHG target, and therefore correspond with the Paris Agreement's 2°C goal and would support CEQA streamlining benefits; however, an emissions target scenario that could allow absolute emissions growth in the interim may present challenges from a public perception standpoint.

Target Option F is also a good candidate if the City wishes to demonstrate a more aggressive 2045 carbon neutrality pathway than the previous examples. The values shown for this option represent a linear trajectory in emissions intensity from 2015 levels to carbon neutrality by 2045.

Table 4
2030 and 2040 Greenhouse Gas Target Options

Option	Target	Considerations	Recommendation
Target Option A – 2008 Scoping Plan Mass Emissions Target			
2030	40% below 2015 levels (1,860,281 MT CO_2e/yr)	Not appropriate use of State's 2030 target because it should be measured from 1990 inventory levels, and City's baseline inventory is 2015	**No**
2040	60% below 2015 levels (1,240,187 MT CO_2e/yr)	Not appropriate interpolation of State's 2030 and 2050 targets because they should be measured from 1990 inventory levels, and City's baseline inventory is 2015	**No**
Target Option B – 2015 Statewide Inventory Mass Emissions Target			
2020	2.4% below 2015 levels (3,025,654 MT CO_2e/yr)	Roughly approximates return to 1990 levels based on statewide inventories; implies that all state inventory sectors are included in local inventory, which is not true	**Maybe**

[24] *The Newhall Ranch case was not about a communitywide climate action plan, but rather a new development project and that project's GHG threshold. This is an important distinction because communitywide CAPs consider emissions from existing and future development, whereas a project's CEQA analysis only considers emissions from new development associated with the project. However, the guidance provided in the Newhall Ranch case decision is still interpreted as a good analog for CAP target setting because it affirms the connection between State's GHG legislative framework, local agency determination, and CEQA determination.*

[25] *Target Options D and E could result in mass emissions increases if population and/or employment growth is substantially higher than assumed in the General Plan.*

Table 4 2030 and 2040 Greenhouse Gas Target Options			
Option	**Target**	**Considerations**	**Recommendation**
2030	40% below 2020 target level (1,815,392 MT CO_2e/yr)	Mirrors State targets, assuming 2020 target represents a return to 1990 levels These targets would align with the Paris Agreement 2°C goal through consistency with California's 2050 GHG target	**Maybe**
2040	60% below 2020 target level (1,210,262 MT CO_2e/yr)		**Maybe**
Target Option C – 2017 Scoping Plan Intensity Targets			
2030	6.0 MT CO_2e/capita (2,882,544 MT CO_2e/yr)	Not an appropriate use of ARB guidance in Scoping Plan Update because targets assume all statewide inventory sectors are included in local inventory; City's inventory only includes a sub-set of statewide sectors	**No**
2040	4.0 MT CO_2e/capita (1,937,940 MT CO_2e/yr)		**No**
Target Option D – Local Emissions Source-Based Intensity Targets			
2030	4.46 MT CO_2e/capita (2,142,691 MT CO_2e/yr); 3.06 MT CO_2e/SP (1,997,327 MT CO_2e/yr)	Calculates per capita and per service population emissions targets based on sub-set of statewide emissions sectors that will are included in City's inventory These targets would align with the Paris Agreement 2°C goal through consistency with California's 2050 GHG target	**Maybe**
2040	2.79 MT CO_2e/capita (1,351,713 MT CO_2e/yr); 1.92 MT CO_2e/SP (1,279,008 MT CO_2e/yr)		**Maybe**

Table 4 2030 and 2040 Greenhouse Gas Target Options			
Option	**Target**	**Considerations**	**Recommendation**
Target Option E – Local Emissions (without Passenger Vehicles) Intensity Targets			
2030	2.98 MT CO_2e/capita (1,431,664 MT CO_2e/yr); 2.04 MT CO_2e/SP (1,331,552 MT CO_2e/yr)	Calculates per capita and per service population emissions targets based on sub-set of statewide emissions sectors that will be included in City's inventory, excluding passenger cars and light duty trucks, which will be addressed at the regional level through SB 375 legislation[26] These targets would align with the Paris Agreement 2°C goal through consistency with California's 2050 GHG target *Note: This option proposes removing only the passenger vehicle emissions from consideration and not mobile emissions from other types of vehicles. This would remove only GHG emissions that are specifically addressed through the SB 375 process.*	**Maybe**
2040	1.86 MT CO_2e/capita (901,142 MT CO_2e/yr); 1.28 MT CO_2e/SP (852,672 MT CO_2e/yr)		**Maybe**
Target Option F – Net Carbon Neutrality Target (straight line trajectory)			
2030	3.31 MT CO_2e/capita (1,588,297 MT CO_2e/yr); 2.48 MT CO_2e/SP (1,620,776 MT CO_2e/yr)	Aims for carbon neutrality by 2045, with interim targets based on linear trajectory from City's emissions intensity levels in 2015 to net zero emissions in 2045 Achieving carbon neutrality would require GHG reductions in emissions sub-sectors over which the City does not exercise direct control (e.g., waterborne navigation, rail transport, oil/gas refining) and would be contingent upon partnerships with external agencies/organizations or investment in carbon offset programs These targets would align with the Paris Agreement 1.5°C goal through consistency with California's 2045 carbon neutrality target	**Maybe**
2040	1.10 MT CO_2e/capita (533,908 MT CO_2e/yr); 0.83 MT CO_2e/SP (551,374 MT CO_2e/yr)		**Maybe**

[26] *The Sustainable Communities and Climate Protection Act of 2008 (SB 375) directs the California Air Resources Board to set regional targets for GHG reductions from passenger vehicles. The targets are designed to align with the State's GHG reduction targets, and are implemented through a Regional Transportation Plan/Sustainable Communities Strategy prepared by California's metropolitan planning organizations, including the Southern California Association of Governments of which Long Beach is a member.*

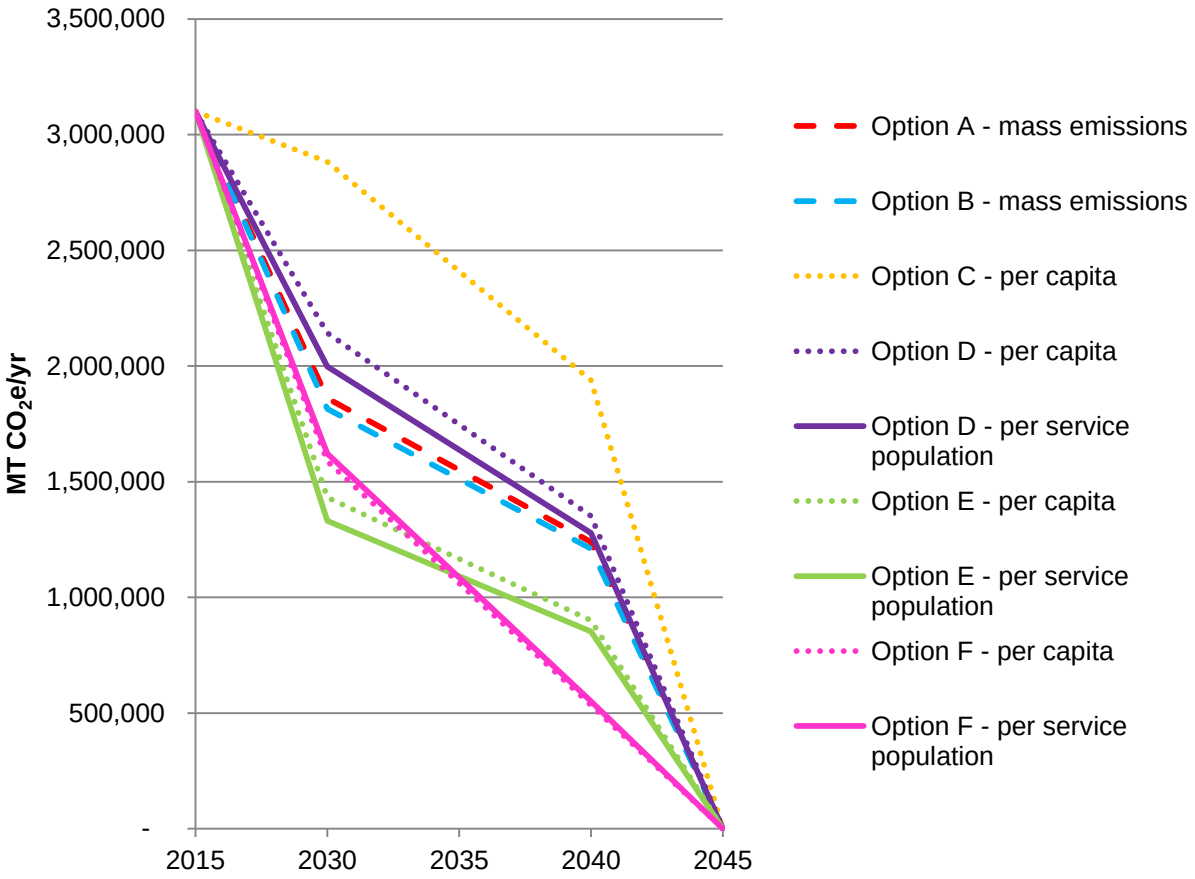
J. 2045 GHG Aspirational Goal

As previously described, the Mayor recommended that the City aim to achieve a carbon neutrality goal by 2045, which would align with the State's carbon neutrality target expressed in EO B-55-18. The previous 2050 GHG goal options considered in Target Setting Memo #1 have been replaced with 2045 carbon neutrality goals for all target options in this Memo #2.

K. Target Option Summary

Figure 3 illustrates each of the target options when converted into mass emissions levels based on local resident and employment forecasts from the City's General Plan Update Land Use Element.

Figure 3 – Target Options in Mass Emissions



Figures 4 and 5 illustrate the target options as emissions intensity levels with per service population targets (Figure 4) and per capita targets (Figure 5). Note there is no per service population version of Target Option C.

Figure 4 – Target Options in Emissions per Service Population

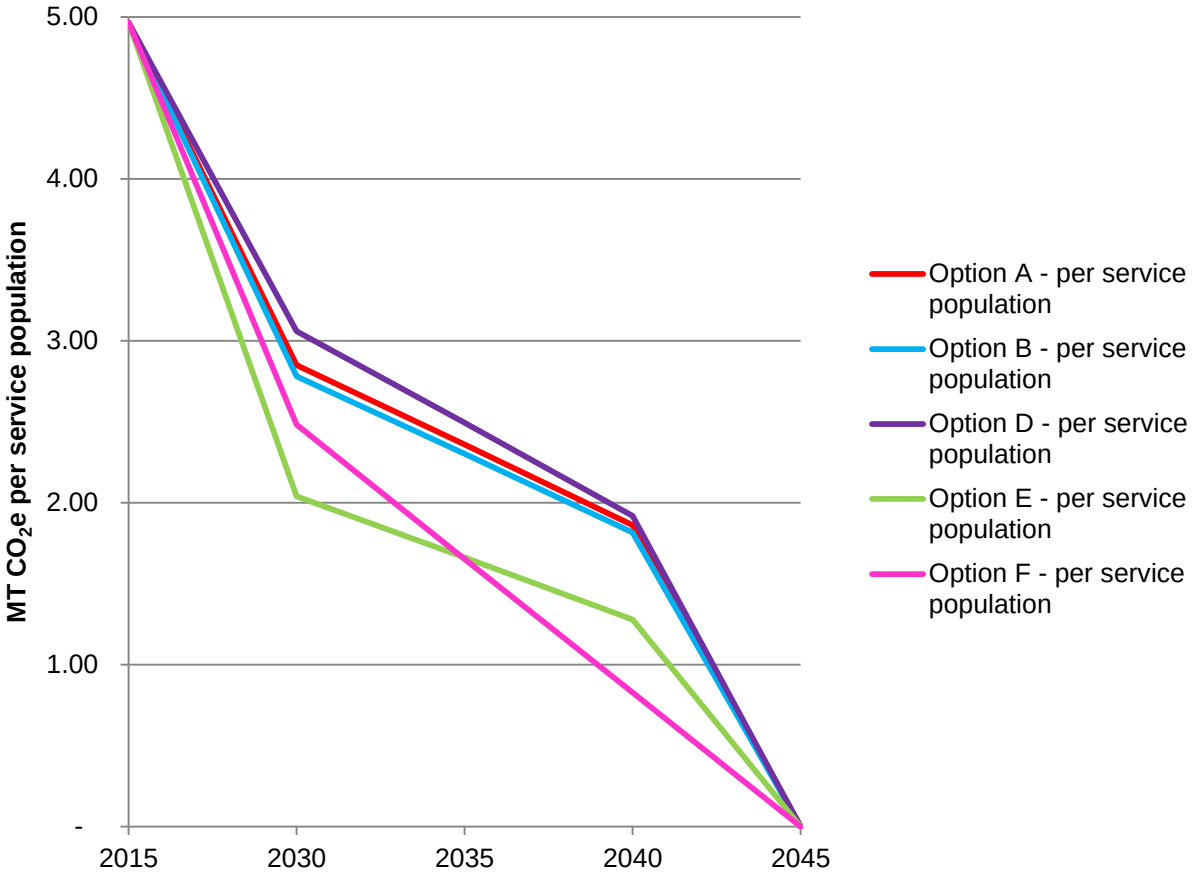
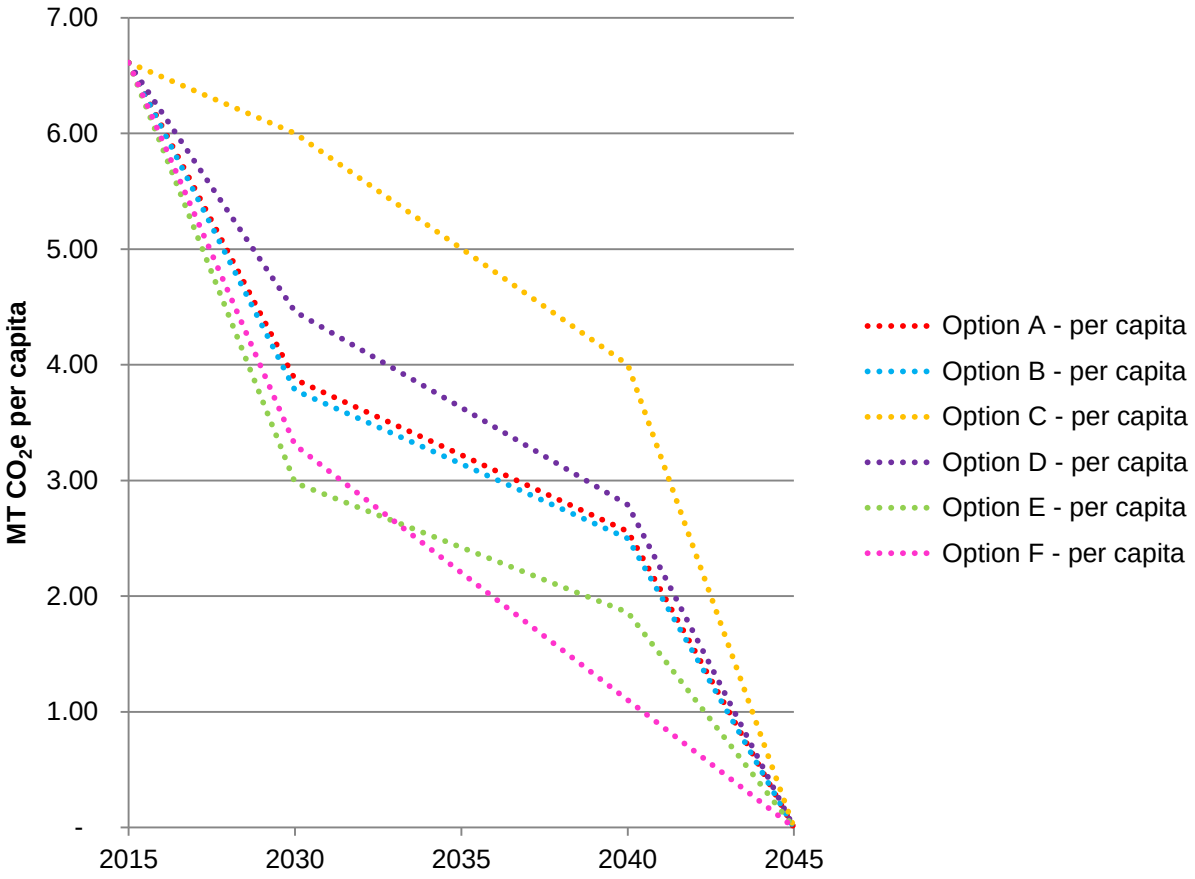


Figure 5 – Target Options in Emissions per Capita



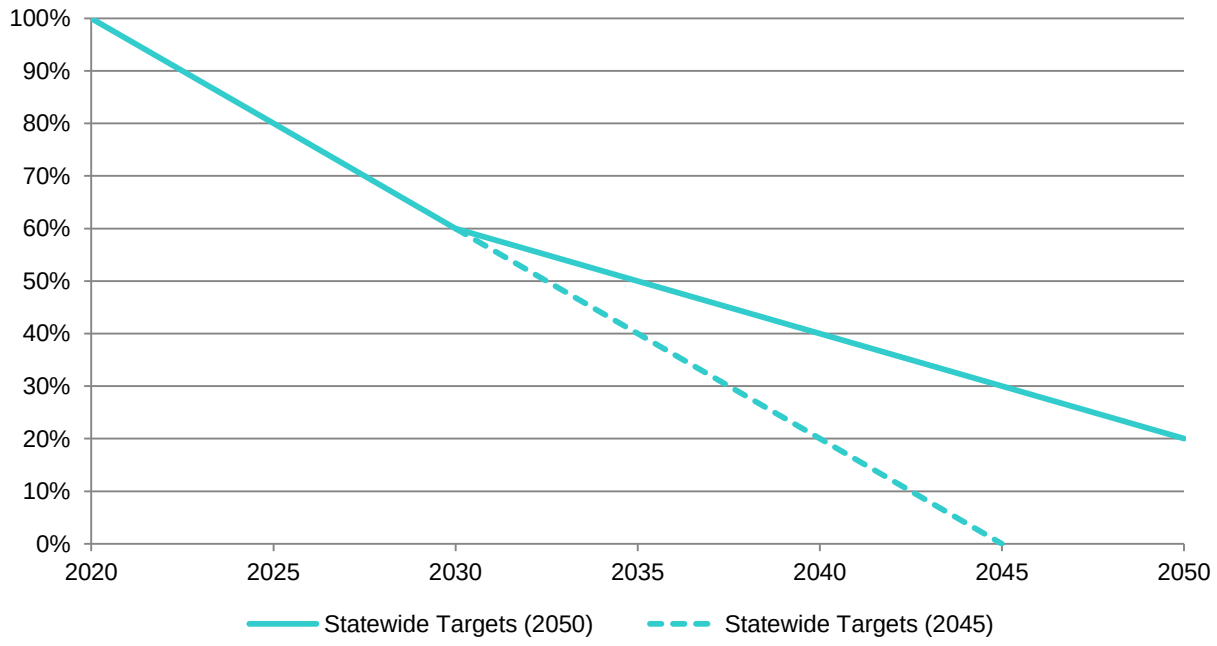
Section 2 – Target Calculation Methodology

A. Statewide Targets

In 2006, California took steps to develop a long-term response to the challenges of climate change through adoption of Assembly Bill 32 (AB 32). As the first-of-its-kind legislation in the country, AB 32 established a statewide GHG emissions reduction target to return to 1990 emissions levels by the year 2020. In addition to the near-term 2020 target codified in AB 32, Executive Order (EO) S-3-05 was signed by then-Governor Schwarzenegger in 2005 to establish a long-term emissions target of 80% below 1990 levels by 2050. Then, SB 32 was signed in 2016 to establish an interim target between the State's 2020 and 2050 targets, calling for reductions of 40% below 1990 levels by 2030. In 2018, then-Governor Brown signed EO B-55-18 to establish a 2045 carbon neutrality target for the state. Figure 6 illustrates the trajectory of the State's targets from 2020 through 2050 as a solid line, and from 2020 through 2045 as a dashed line to illustrate both of the long-term Executive Order GHG targets.

For purposes of the target setting calculation methodology described in this section, the State's 2050 GHG targets expressed in EO S-3-05 are referenced and used to calculate the 2040 interim target options. This is to align the target options with the local government guidance provided in the 2017 Scoping Plan, which also reference the State's 2050 climate goals.

Figure 6 – Statewide Emissions Target Trajectory



Statewide Emissions Inventory

AB 32 (2006) required that the Air Resources Board (ARB) determine the statewide greenhouse gas emissions level in 1990, from which progress toward achievement of the emissions targets shown in Figure 6 can be measured. AB 32 also required ARB to approve a statewide greenhouse gas emissions limit, equal to the 1990 level, as a limit to be achieved by 2020. In 2014, ARB adopted a revised 2020 emissions limit of 431 MMT CO_2e. This new emissions limit replaced the original 1990 limit approved in 2007. The currently approved 1990 limit (i.e., 431 MMT CO_2e) includes emissions from all sectors within the state. Table 5 shows the State's 2020, 2030 and 2050 emissions targets based on the approved 1990 limit. A 2040 target year value was interpolated between the 2030 and 2050 targets to correspond with the Long Beach General Plan horizon year.

Table 5
Statewide Emissions Inventory and Reduction Targets

	1990	2020	2030	2040	2050
Statewide Emissions Targets (MMT CO_2e)	431.0 [1]	431.0 [1]	258.6 [2]	n/a	86.2 [4]
Interpolated Mid-term Reduction Target	n/a	n/a	n/a	172.4 [3]	n/a
Amount below 1990 Levels	0%	0%	40%	60%	80%

Source: AECOM 2019

Note: MMT CO_2e = million metric tons of carbon dioxide equivalent

[1] California 1990 Greenhouse Gas Emissions Level and 2020 Limit, ARB: <http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>

[2] 40% below 1990 levels per SB 32

[3] Interpolated between 2030 and 2050 targets

[4] 80% below 1990 levels per EO-S-3-05

Local Application of Statewide Emissions Targets

Local governments in California often select the same emissions targets as the State when preparing GHG analyses. However, community GHG inventories often do not include all of the same emissions sectors as the statewide inventory. For example, community inventories may not include agricultural or forestry emissions. Therefore, a scaled version of the full statewide emissions inventory was developed as part of the City's CAAP analysis, which is based on the emissions inventory sectors occurring in Long Beach. The revised inventory is more appropriate for use in community CAAP target-setting because it draws a clearer correlation between the City's GHG target and its relationship to the State's own targets.

Table 6 on the following page presents a revised version of the 1990 statewide emissions shown in Table 5 and includes only the sectors and sub sectors included in the Long Beach communitywide inventory.

Table 6 Adjusted Statewide Emissions Inventory – Local Emissions Sources			
Main Sector / Sub Sector Level 1	**Total Emissions (MMT CO_2e/yr)** [1]	**Adjusted Emissions – Local Sources (MMT CO_2e/yr)**	**Notes/Adjustments**
Agriculture & Forestry	18.9	0.0	Excluded
Commercial	14.4	13.9	Excludes National Security emissions from Sub Sector Level 1
Electricity Generation (Imports)	61.5	61.5	Includes all emissions
Electricity Generation (In State)	49.0	34.4	Excludes CHP: Industrial from Sub Sector Level 1
Industrial	105.3	40.3	Industrial emissions included, except as described in sub sectors below:
CHP: Industrial	*9.7*	*0.0*	*Excluded*
Flaring	*0.2*	*0.2*	
Landfills	*7.4*	*7.4*	
Manufacturing	*32.1*	*12.4*	*Includes only natural gas emissions from Activity Level 2*
Mining	*0.03*	*0.0*	*Excluded*
Not Specified	*2.7*	*0.0*	*Excluded*
Oil & Gas Extraction	*14.8*	*14.8*	
Petroleum Marketing	*0.02*	*0.0*	*Excluded*
Petroleum Refining	*32.8*	*0.0*	*Excluded*
Pipelines	*1.9*	*1.9*	
Waste Water Treatment	*3.6*	*3.6*	
Not Specified	1.3	1.3	Includes all emissions
Residential	29.7	29.7	Includes all emissions
Transportation	150.6	145.5	Excludes aviation emissions
Total	**431.0**	**326.6**	

Notes: Sectors/sub-sectors may not sum exactly due to rounding
[1] California 1990 Greenhouse Gas Emissions Level and 2020 Limit by Sector, ARB: <http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>

Table 7 on the following page presents the adjusted statewide emissions based on the local emissions sources occurring in the Long Beach community inventory, with the corresponding statewide emissions targets for the 2020, 2030, 2040 and 2050 target years.

Table 7 Adjusted Statewide Emissions Inventory, Forecasts, and Reduction Targets – Local Emissions Sources					
	1990	**2020**	**2030**	**2040**	**2050**
Statewide Emissions Targets (MMT CO_2e)	326.6 [1]	326.6 [1]	195.94 [2]	130.63 [3]	65.31 [4]
Amount below 1990 Levels	0%	0%	40%	60%	80%

Source: AECOM 2019

Note: MMT CO_2e = million metric tons of carbon dioxide equivalent

[1] See Table 6 for statewide inventory source and local emissions source adjustments.

[2] 40% below 1990 levels (i.e., 2020 target levels) per SB 32

[3] Interpolated between 2030 and 2050 targets

[4] 80% below 1990 levels (i.e., 2020 target levels) per EO-S-3-05

B. Emissions Intensity Targets

Statewide emissions reduction targets can be normalized and expressed on a per-capita or per-service population basis to represent the intensity of emissions needed statewide to achieve the AB 32 and SB 32 targets. For example, to create an intensity target that represents AB 32, one would divide the statewide emissions target for 2020 (shown in Table 6) by the statewide population and employment forecasts for 2020. This would yield an emission "budget" for each California resident and employee and demonstrate that emissions levels in a community are the same as what would be required statewide to achieve the AB 32 GHG reduction target. As noted previously, ARB's Proposed Scoping Plan recommends an intensity target approach for local governments for 2030 and 2050 target years.

Table 8 presents statewide population and employment forecasts through 2050. The year 2024 is presented in this table because employment forecasts are available from the State Employment Development Department for this year.

Table 8 Statewide Demographic Projections						
	2015	**2020**	**2024**	**2030**	**2040**	**2050**
Population	39,059,415 [1]	40,639,392 [1]	41,994,283 [1]	43,939,250 [1]	46,804,202 [1]	49,077,801 [1]
Employment	17,393,550 [2]	18,686,300 [2]	19,720,500 [3]	20,651,448 [4]	21,997,975 [4]	23,066,566 [4]
Service Population (population + employment)	56,452,965	59,325,692	61,714,783	64,590,698	68,802,177	72,144,367

Source: AECOM 2019

[1] DOF Table P-1 Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year increments. January 2018. Available online at: <http://www.dof.ca.gov/Forecasting/Demographics/projections/>

[2] Interpolated from Employee Development Department (EDD) Employment Projections for 2014 (17,135,000) and 2024 (19,720,500). See Note 3 for employment estimation source.

[3] Employee Development Department (EDD) Employment Projections. Available online at: <http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html>

[4] EDD does not provide employment estimates to 2050, so the ratio of employment to population estimated in 2024 (i.e., 47.0%) was applied to the DOF population estimates for 2030, 2040, and 2050.

Intensity Targets – Total Statewide Inventory

Using the demographic forecasts from Table 8 and the statewide GHG targets from Table 5, statewide emissions intensity targets can be developed for the 2020, 2030, 2040, and 2050 target years, which are presented in Table 9. The 2015 baseline emissions intensity levels are also shown.

Table 9
Statewide Emissions Intensity Baseline and Targets

	2015	2020	2030	2040	2050
Emissions Targets (MT CO_2e/yr) [1]	441,400,000 [3]	431,000,000	258,600,000	172,400,000	86,200,000
Population [2]	39,059,415	40,639,392	43,939,250	46,804,202	49,077,801
Service Population (SP) [2] (population + employment)	56,452,965	59,325,692	64,590,698	68,802,177	72,144,367
Per Capita Emissions Intensity Targets (MT CO_2e/capita/yr)	**11.30**	**10.61**	**5.89**	**3.68**	**1.76**
Per Service Population Emissions Intensity Targets (MT CO_2e/SP/yr)	**7.82**	**7.26**	**4.00**	**2.51**	**1.19**

Source: AECOM 2019

Note: MT CO_2e = metric tons of carbon dioxide equivalent; Service Population (SP) = population + employment

[1] See Table 5 for sources.

[2] See Table 8 for sources.

[3] California Air Resources Board, statewide 2015 inventory. Available online at: <https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_sector_sum_2000-16.pdf>

Intensity Targets – Local Emissions Sources

Local emissions intensity targets can be based upon the adjusted statewide emissions inventory to reflect local emissions sources. The calculation of local intensity targets needs to incorporate the employment projections associated with the emissions activities for which emissions are being considered. Table 10 presents the revised statewide demographic projections reflecting only those employment sectors included in the local emissions sources from Table 6.

Table 10 Statewide Demographic Projections – Local Emissions Sources Employment					
	2020	**2024**	**2030**	**2040**	**2050**
Population	40,639,392 [1]	41,994,283 [1]	43,939,250 [1]	46,804,202 [1]	49,077,801 [1]
Employment	18,185,480 [2]	19,194,800 [3]	20,083,808 [4]	21,393,324 [4]	22,432,543 [4]
Service Population (population + employment)	58,824,872	61,189,083	64,023,058	68,197,526	71,510,344

Source: AECOM 2019

[1] DOF Table P-1 Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year increments. January 2018. Available online at: <http://www.dof.ca.gov/Forecasting/Demographics/projections/>

[2] Interpolated from revised (i.e., local emissions sources) Employee Development Department (EDD) Employment Projections for 2014 (16,671,500) and 2024 (19,194,800). See Note 3 for employment estimation source.

[3] Employee Development Department (EDD) Employment Projections. Available online at: <http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html>. Sorted to remove jobs from: 11-9013 Farmers, Ranchers, and Other Agricultural Managers; 19-1032 Foresters; 19-4093 Forest and Conservation Technicians; 45-000 Farming, Fishing, and Forestry Occupations; 47-5021 Earth Drillers, Except Oil and Gas; 49-3041 Farm Equipment Mechanics and Service Technicians.

[4] EDD provides 2- and 10-year employment estimates that currently extend to 2024, so the ratio of employment to population estimated in 2024 (i.e., 45.7%) was applied to the DOF population estimates for 2030, 2040, and 2050 to estimate employment in those years.

Based on the adjusted statewide demographic projections shown above, Table 11 shows the intensity targets most applicable for use in Long Beach's CAAP given the emissions sources included in its communitywide inventory.

Table 11 Local Emissions Intensity Targets				
	2020	**2030**	**2040**	**2050**
Emissions Targets (MT CO_2e/yr) [1]	326,570,000	195,940,000	130,630,000	65,310,000
Percent Mass Emissions Reduction	n/a	40% below 1990	60% below 1990	80% below 1990
Population [2]	40,639,392	43,939,250	46,804,202	49,077,801
Service Population (SP) [2]	58,824,872	64,023,058	68,197,526	71,510,344
Per Capita Emissions Intensity Targets (MT CO_2e/capita/yr)	**8.04**	**4.46**	**2.79**	**1.33**
Per Service Population Emissions Intensity Targets (MT CO_2e/SP/yr)	**5.55**	**3.06**	**1.92**	**0.91**

Source: AECOM 2019

Note: MT CO_2e = metric tons of carbon dioxide equivalent; Service Population (SP) = population + employment

[1] See Table 7 for sources

[2] See Table 10 for sources.

APPENDIX C:

LAND USE CONSISTENCY ANALYSIS

This page intentionally left blank

APPENDIX C

LAND USE CONSISTENCY ANALYSIS

The following tables summarize applicable goals, policies, and strategies from the California Coastal Act (CCA), the City of Long Beach Local Coastal Program (LCP), the 2016–2040 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS), and the City of Long Beach General Plan. The tables also include an evaluation of potential land use impacts associated with the project's consistency with each plan. Refer to Section 4.4, Land Use and Planning, of this Recirculated Draft EIR for further discussion related to the project's land use impacts.

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
California Coastal Act (1972)	
Overview. The southern area of the City is located within the Coastal Zone, which is regulated by the California Coastal Commission (CCC) under the California Coastal Act (CCA). While the proposed project would not include any physical improvements within the Coastal Zone that would require Coastal Development Permits (CDPs) from the CCC, the proposed project would require an update to the City's existing Local Coastal Program (LCP), discussed in more detail below, that would require approval from the CCC. According to the CCA, Chapter 3 of the CCA is to be utilized by the CCC when reviewing CDPs and LCPs. As analyzed herein, the proposed project would be consistent with the CCA.	
Chapter 3. "The California Coastal Act of 1976 (CCA) was created to: (1) Protect, maintain, and, where feasible, enhance and restore the overall quality of the Coastal Zone environment and its natural and manmade resources; (2) Ensure orderly, balanced utilization, and conservation of Coastal Zone resources, taking into account social and economic needs; (3) Maximize public access to and along the coast and maximize public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners; and (4) Ensure priority for coastal-dependent development over other development on the coast."	**Consistent.** The proposed project aims to protect, maintain, and enhance the overall quality of the California Coastal Zone by preserving existing natural resources (i.e., wetlands) within the Coastal Zone. The proposed project allows a balance between orderly, new development and conservation. For example, Strategy No. 19 in the Land Use Element (LUE) aims to protect and preserve water bodies. In addition, LU Policies 19-1 through LU 19-5 aim to protect and preserve marine resources and the coastal environment. Policy UD 17-3 also calls for the establishment of buffers between natural resources and the built environment to reduce impacts to natural resources, such as those resources found within the Coastal Zone. Further, Strategy No. 29 and Policy UD 29-1 call for the protection of the City's natural resources, including the Pacific Ocean and its associated tributaries. The Urban Design Element (UDE) also includes Policy UD 28-2, which encourages lower-density development near waterfront areas so as to minimize impacts associated with new development adjacent to the coastline. The proposed project would also maintain public access by promoting improvements to existing and the construction of new pedestrian and bicycle pathways to the coast. For example, the proposed UDE includes Policy UD 28-1, which encourages the City to, "improve public access to the marinas and waterfront." The proposed project would facilitate future development, including coastal-dependent and water-related uses (e.g., restaurants, museums, resorts, mixed-use projects, and Port facilities).

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
Section 30211: Development not to interfere with access. "Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation."	**Consistent.** The proposed project would maintain existing public accessways and would promote new pedestrian and bicycle pathways to the coast (Policy UD 28-1). The proposed project would also encourage pedestrian-oriented and transit-oriented development within the Coastal Zone to improve public access to the coast. Therefore, the proposed project would encourage, not interfere with, the public's right of access to the sea.
Section 30213: Lower cost visitor and recreational facilities; encouragement and provision; overnight room rentals. "Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred."	**Consistent.** The proposed project would promote the preservation of existing recreational facilities (Policy UD 30-1) and would seek to provide additional opportunities for recreation throughout the City. For example, the proposed project would allow for planned improvements to the public Belmont Pier area within the proposed Waterfront PlaceType. These areas provide low-cost visitor and recreational opportunities including access to low-cost public swimming and public fishing at the pier, along with passive enjoyment of coastal resources. The proposed project would promote the creation of new pedestrian and bicycle pathways to the coast within the Waterfront PlaceType. The proposed project would also establish the Open Space PlaceType, which would be encouraged within the Coastal Zone to preserve existing open space and recreational facilities, such as passive parks, viewing areas, and public launch facilities along the coastline. The proposed project would also provide for adequate parking facilities to further enhance public accessibility to the coast. Therefore, the proposed project would preserve existing and provide for new low-cost visitor and recreational facilities.
Section 30221: Oceanfront land; protection for recreational use and development. "Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area."	**Consistent.** As illustrated by Figure 3.4, Project PlaceTypes (refer to Chapter 3.0, Project Description), the proposed project would primarily allow for the Open Space and Waterfront PlaceTypes adjacent to oceanfront land in the City. Within these PlaceTypes, existing uses and future recreational facilities would be maintained and encouraged, consistent with the intent of Goal 8 and Policy UD 30-1. While the proposed project is considered a policy/planning action and does not include any development activities, future development compatible with existing uses and natural resources would be encouraged within the Waterfront PlaceType. Therefore, the proposed project would maintain existing recreational facilities in oceanfront areas, retain beaches and opportunities for ocean viewing from piers, parks, and walkways, and encourage development in areas that could accommodate such uses.
Section 30230: Marine Resources; Maintenance. "Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that would sustain the biological productivity of coastal water and that would maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes."	**Consistent.** The proposed project would establish the Waterfront and Open Space PlaceTypes that would serve to protect existing biological marine resources within the Coastal Zone. For example, LU Policy 20-2 specifies that it is the City's goal to protect and preserve the marine ecosystem and biological marine species. The proposed LUE also aims to restore damaged waterbodies and natural areas (LU Policy 20-3) and restore the City's wetlands and other natural marine areas (LU Policy 20-4). Therefore, the proposed project would serve to maintain, enhance, and restore marine species within the Coastal Zone.

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
Section 30231: Biological Productivity; Water Quality. "The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of wastewater discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface water flow, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams."	**Consistent.** The proposed project would establish several goals and policies aimed at preserving the biological productivity and quality of coastal waters and wetlands. Specifically, Implementation Strategies LU-M-100 and LU-M-101 of the proposed LUE aim to reduce urban runoff and improve water quality through the implementation of Best Management Practices (BMPs) and consultation with applicable agencies governing watersheds in the City of Long Beach. Additionally, LU Strategy 20 and Policies 20-1 through 20-5 would further serve to reduce impacts to existing marine resources and water quality as these policies aim to preserve, restore, and protect water bodies and natural areas; restore damaged and degraded water bodies and natural areas (including wetlands and lagoons); improve water quality and re-establish native riparian habitat areas; and prevent stormwater runoff and pollutants from entering water bodies. Therefore, the proposed project would maintain and enhance biological productivity and the quality of coastal waters and wetlands.
Section 30240: Environmentally sensitive habitat areas; adjacent developments. "(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade"	**Consistent.** All environmentally sensitive habitat areas (EHSA) within the Coastal Zone will remain protected following project implementation. The EHSA map for the City will not change, and future LCP amendments will be refined at the time individual applications for development within the City's Coastal Zone are proposed. Refer to Figure 4.4.7 in Section 4.4, Land Use and Planning, for a map of habitat, including ESHAs, within the SEASP area. In addition, the proposed project would establish several goals and policies aimed at preserving existing natural habitats within the City. For example, LU Policy 6-12 aims to protect wetlands and local coastal habitats through the implementation of appropriately scaled land use patterns in the Southeast Area Specific Plan (SEASP) area. Additionally, LU Strategy No. 20 and LU 20-1 Policy through LU Policy 20-5 aim to preserve, restore, and protect natural areas and wildlife habitats in the City. Implementation Strategies LU-M-97 through LU-M-99, Strategy No. 29 (in the UDE), and UD Policy 29-1 also aim to preserve existing sensitive habitats through the allocation of monetary funds for the purpose of habitat and wetland restoration; the development of feasibility plans aimed at restoring wetlands and habitat areas; and collaborative efforts with the community to restore and rehabilitate habitats along the San Gabriel and Los Angeles Rivers, the Los Cerritos Wetlands, the Colorado Lagoon, and Alamitos Bay. As such, future development (with discretionary actions) facilitated by the proposed project would be required to undergo review pursuant to the California Environmental Quality Act (CEQA), and/or the National Environmental Policy Act (NEPA), which would include an analysis of potential impacts to biological resources, including environmentally sensitive habitat areas.
Section 30250: Location; existing developed area. "(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas	**Consistent.** The proposed project would allow for Open Space, Multi-Family Residential-Low, Founding and Contemporary Neighborhoods, Waterfront, and Neighborhood-Serving Center and Corridor-Low PlaceTypes within the Coastal Zone. As illustrated by Figure 4.4.1, Existing Land Uses, the establishment of the Multi-Family Residential-Low, Founding and Contemporary Neighborhoods, and Neighborhood-Serving Centers and Corridors-Low PlaceTypes would allow for existing residential and commercial uses to remain within the Coastal Zone and would facilitate future residential and commercial development that would be compatible

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
with adequate public services and where it would not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels. (b) Where feasible, new hazardous industrial development shall be located away from existing developed areas. (c) Visitor-serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors."	with existing uses in this area and where adequate public services are already available. As specified in Policy UD 15-2, the proposed project would encourage infill development that is appropriate in use, scale, compactness, and design with existing development. Further, because the City is almost entirely urbanized, there are no agricultural resources in the City that would be impacted as a result of future development facilitated by project approval. Therefore, new development facilitated by the proposed project would be contiguous with existing developed areas within the Coastal Zone, thereby minimizing impacts to coastal resources. While the proposed LUE would not allow for new industrial activities in the Coastal Zone, the proposed project includes the proposed Neo-Industrial PlaceType that would allow for small-scale industrial and related commercial activities elsewhere in the City. This PlaceType would serve as a buffer between existing residential and industrial developments, as specified by Policy LU 7-2, as well as Policies UD 24-3, 24-8, and 25-1. Therefore, the proposed project would locate industrial uses away from existing developed areas and would not result in hazardous industrial development in the Coastal Zone. The proposed project would encourage the preservation of existing, and the creation of new, visitor-serving facilities (e.g., hotels, restaurants, recreational facilities, parks, and pedestrian and bicycle pathways) within the Coastal Zone. Therefore, the proposed project would not interfere with existing visitor-serving facilities and rather, would promote the development of new visitor-serving facilities.
Section 30251: Scenic and visual qualities. "The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting."	**Consistent.** As described further in Section 4.1, Aesthetics, scenic views afforded to the City within the Coastal Zone include views of the Pacific Ocean, the Port of Long Beach, the San Gabriel Mountains, the Santa Ana Mountains, marinas, and parks. While the proposed project would facilitate future higher-density development, the proposed project would include the establishment of various goals, strategies, policies, and design recommendations that would ensure future development would be visually compatible with existing development in the Coastal Zone and would protect scenic vistas. For example, Policy UD 17-1 restricts new development from encroaching into natural areas so as to protect viewsheds. The proposed project would also encourage the preservation of natural land areas, thereby minimizing the alteration of natural landforms. Further, as illustrated by Figure 3.3, Proposed PlaceTypes (refer to Chapter 3.0, Project Description), the proposed project would allow for the preservation of existing open space uses along the coastline, which would minimize impacts related to the existing scenic character of the City's coastline. Therefore, the proposed project would minimize impacts to the scenic and visual qualities of coastal areas.
Section 30252: Maintenance and enhancement of public access. "The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that would minimize the use of coastal access roads, (3) providing nonautomobile circulation within the development, (4) providing	**Consistent.** The proposed project would maintain existing access and provide improved access to the coast by promoting improvements to existing and the construction of new pedestrian and bicycle pathways to the coast. The proposed project would also promote public access to the coast by encouraging the preservation of existing, and the creation of new, open space and recreational facilities. The proposed UDE also aims to improve public access to the City's marinas and waterfront (Policy UD 28-1). The proposed project would further public access to the coast by promoting alternate modes of transportation and encouraging mixed-use, pedestrian-oriented development (e.g., mixed-use development and the establishment of the

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents would not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development."	Transit-Oriented Development-Low and Moderate PlaceTypes) that would minimize the use of coastal access roads. The proposed project would also promote public access to the coast by encouraging transit-oriented and pedestrian-oriented development adjacent to existing transit stops along Long Beach Boulevard in the Downtown area, directly north of the Coastal Zone. The proposed project would also allow for adequate parking facilities associated with new development within the Waterfront PlaceType. For example, the proposed LUE requires that sufficient shared parking be provided with increased building densities (Policy UD 19-2) and also requires that bicycle racks, storage lockers, and plug-in spaces for electrical vehicles be provided in every parking structure within the Waterfront PlaceType. Furthermore, as illustrated by Figure 3.3, Proposed PlaceTypes (refer to Chapter 3.0, Project Description), the proposed project would allow for the Open Space PlaceType in the Coastal Zone, which would further the City's goal of providing a compatible balance between new development and parks and recreational facilities along the coastline. Therefore, the proposed project would maintain and enhance public access to the coast.
Section 30253: Minimization of adverse impacts. "New development shall do all of the following: (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. (c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development. (d) Minimize energy consumption and vehicle miles traveled. (e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses."	**Consistent.** The City is not located within a Fire Severity Zone as established by the California Department of Forestry and Fire Protection (CAL FIRE).[1] In addition, the proposed project is considered a policy/planning action and does not include any physical improvements. Further, future projects facilitated by approval of the proposed project would be required to be planned in accordance with applicable State standards related to geologic, flood, and fire hazards. Consequently, the proposed project would not result in geologic, flood, or fire risks, nor would the project conflict with requirements imposed by the California Air Resources Board (CARB). While the proposed project does not include any physical development within the City, the project does include several goals and policies aimed at reducing automobile reliance within the City to improve the existing circulation system and to minimize energy consumption (LU Policy 1-1 and Implementation Strategy LU-M-3) and vehicle miles traveled (refer to Sections 4.2, Air Quality, and 4.3, Greenhouse Gas Emissions). Furthermore, future projects facilitated by project approval would be evaluated through environmental review to ensure that new development would not result in risks to life and property in areas of high geologic, flood, and fire hazards. The proposed project would allow for new development within the Coastal Zone while also maintaining the character of existing neighborhoods so as not to detract from the unique characteristics of these communities (refer to Policies 2-1, 5-4, 9-2, Strategy 9, and Implementation Strategy 51 in the UDE). Therefore, the proposed project would not result in adverse impacts related to geology, flooding, fire hazards, air pollution, energy consumption/vehicle miles traveled, and the character of existing communities within the Coastal Zone.

[1] California Department of Forestry and Fire Protection (CAL FIRE). Los Angeles County Fire Hazard Severity Map. Website: http://frap.fire.ca.gov/webdata/maps/los_angeles/fhszs_map.19.pdf (accessed November 1, 2018).

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
Section 30708: Location, Design and Construction of Port-related Developments. "All port-related developments shall be located, designed, and constructed so as to: (a) Minimize substantial adverse environmental impacts. (b) Minimize potential traffic conflicts between vessels. (c) Give highest priority to the use of existing land space within harbors for Port purposes, including, but not limited to, navigational facilities, shipping industries, and necessary support and access facilities. (d) Provide for other beneficial uses consistent with the public trust, including, but not limited to, recreation and wildlife habitat uses, to the extent feasible. (e) Encourage rail service to Port areas and multicompany use of facilities.'	**Consistent.** The proposed project includes the establishment of the Regional-Serving Facility PlaceType, which includes the Port of Long Beach (among other facilities). The proposed project would allow for the current Port of Long Beach Master Plan to continue serving as the guiding land use document for Port development and other Port activities within this area. Therefore, the proposed project would not facilitate any new development within the Port of Long Beach that would result in adverse environmental impacts, vessel conflicts, land-use conflicts, biological resources and habitat impacts, or rail service conflicts.
City of Long Beach Local Coastal Program (1980)	
Overview. As described further in Project Design Feature 4.4.1, implementation of the proposed project would require the City to update its adopted Local Coastal Plan (LCP) within the first 24 months of project approval. After completion of the Climate Action and Adaptation Plan (CAAP) and Safety Element, the City may contemplate a larger update of the LCP. The LCP was adopted in 1980 and while there are minor changes in height contemplated under the proposed project, outside of the SEASP update process, major changes to the Coastal Zone are not contemplated in the LUE/UDE. Refer to LUE Strategy 8, Policies 8-3 and 7-1, and Southeast Strategy 6, as well as UDE Strategy 28, Implementation Strategies 47 and 59.	
Local Coastal Program – Transportation and Access	**Consistent.** The proposed project contemplates creating land uses and design that promote walking, biking, and the use of transit within the Coastal Zone (refer to LUE Goals 1-6; Implementation Strategies LU-M-11 and 34, Downtown Strategy 9; Midshore Strategy 12, and Southeast Strategy 11, as well as UDE Strategies 42 and 43; Policies 15-3, 18-10, 31-2, 37-3, 38-8, 40-8; and Implementation Strategy 48. This complete streets approach is consistent with the LCP goals of increasing transit use, decreasing use of automobiles and increasing pedestrian and bicycle access. The General Plan is, by definition, general in nature and does not address parking. Rather, parking standards are outlined in the City's Municipal Code. Therefore, the proposed project would be consistent with applicable provisions of the LCP related to Transportation and Access.
Local Coastal Program – General Housing Policy	**Consistent.** The proposed project includes provisions to enhance existing neighborhoods and preserve existing affordable housing consistent with the Housing Element. No changes to the Coastal Zone policies regarding affordability (Mello Act compliance) are proposed. Implementation of the General Plan through the Zoning Code would continue to require local coastal development permits including specific findings regarding existing affordable housing units. The proposed project includes provisions for creation of additional housing units as necessary to fulfill the City's responsibilities under its Regional Housing Needs Assessment (RHNA) and Housing Element (refer to Goals 4 and 6; Implementation Strategies LU-M- 3, 27, and 48, as well as UDE Policy 16-1). The 2014 General Plan Housing Element was certified by the California Coastal Commission as it relates to the LCP. Therefore, the

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
	proposed project would be consistent with applicable provisions of the LCP related to General Housing Policy.
Local Coastal Program – Park Dedication Policy	**Consistent.** This goal has already been implemented by the City. City parks and open space have been so dedicated and are reflected on the PlaceType and Open Space Maps. Implementation of the proposed project would result in the dedication of new open space as it is acquired or developed (refer to Maps 7 and 9 in the proposed LUE and Maps 2 and 12 in the proposed UDE). Therefore, the proposed project would be consistent with applicable provisions of the LCP related to Park Dedication Policy.
Local Coastal Program - Strand Use and Access	**Consistent.** The General Plan is, by definition, general in nature and does not contain specific development plans for the Strands and sandy areas of the beach. No specific changes to the recreational facilities on the beach are contemplated as part of the proposed project; however, the project would promote use of the coastal resources by residents and visitors alike, consistent with the LCP and goals of the Coastal Act (refer to Maps 7 and 9 in the proposed LUE and Maps 2 and 12 in the proposed UDE). Therefore, the proposed project would be consistent with applicable provisions of the LCP related to Strand Use and Access areas.
Local Coastal Program – Downtown Shoreline	**Consistent.** No major changes are proposed within the Downtown Shoreline area as part of the proposed project. Build out and operation of this area would continue to be implemented through PD-6 (refer to Maps 7 and 9 in the proposed LUE and Maps 2 and 12 in the proposed UDE). Therefore, the proposed project would be consistent with applicable provisions of the LCP regulating land use in the Downtown Shoreline area of the City.
Local Coastal Program – The Bluffs	**Consistent.** The proposed project contemplates increased height in existing multifamily neighborhoods bounded by Alamitos Avenue, Broadway, Cherry Avenue, and Ocean Boulevard. There are no identified coastal resources in this area. The purpose of this increase in height and intensity is to create new housing opportunities, upgrade the existing housing stock, maintain affordability (a goal within the LCP discussion of this area), and improve existing parking deficiencies (also called out within the LCP) (refer to LUE Goals 4 and 5 and all of the Midshore Policies, as well as UDE Strategies 1–3, 5, 13, 16, and 19–22). The existing housing stock was developed with little to no parking, whereas new development would be required to meet current parking requirements of the LCP and Zoning Code. This area is noted as high-density residential in the LCP; only the specific height is contemplated in the LUE. This change would be accomplished over time through the LUE implementation program (PDF 4.4.1). At the time of the appropriate zone change, a change to the height text (page III-A-11) of the LCP would be required. Therefore, the proposed project would be consistent with applicable provisions of the LCP regulating land use in The Bluffs area of the City.
Local Coastal Program – Bixby Park	**Consistent.** Changes within this area are limited to a height increase from 2 to 3 stories along Broadway and Redondo Avenue within the mixed-use Neighborhood-Serving Center or Corridor PlaceType. While this is a change from the existing General Plan (which does not have height limits) and would be implemented through a future zone change, it is consistent with the LCP characterization of this area as 2-3 story mixed use (page III-B-11). Refer to LUE Goals 4 and 5 and all of the Midshore Policies, as well as UDE Strategies 1-3, 5, 13, 16, and 19-22 for further discussion related to goals and policies

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
	aimed at future development in the Bixby Park neighborhood. Therefore, the proposed project would be consistent with applicable provisions of the LCP regulating land use in the Bixby Park area of the City.
Local Coastal Program – Belmont Heights/ Belmont Park	**Consistent.** Changes within this area include: mixed-use development along Redondo Avenue (three stories), increased height of residential development around the Belmont Pool (four stories), and increased height on the North side of Ocean Boulevard (three stories). While this is a change from the existing General Plan and zoning, it is not a change from the LCP. Changes would occur over time and are not expected to substantially increase the built density in the area (consistent with page III-C-14). The existing housing stock was developed with little to no parking, whereas new development would be required to meet current parking requirements of the LCP and Zoning Code. Refer to LUE Goals 1 through 5 and all of the Southeast Policies, as well as UDE Strategies 1–3, 5, 13, 16, and 19–22 for further discussion related to goals and policies aimed at future development in the Belmont Heights/Belmont Park neighborhood. Therefore, the proposed project would be consistent with applicable provisions of the LCP regulating land use in the Belmont Heights/Belmont Park area of the City.
Local Coastal Program – Belmont Shore	**Consistent.** Changes within this area include: increased height of residential development along The Toledo (four stories) and on the north side of Ocean Boulevard (three stories). While this is a change from the existing General Plan and zoning, it is not a change from the LCP. Changes would occur over time and are not expected to substantially increase the built density in the area (consistent with page III-C-14). The existing housing stock was developed with little to no parking, whereas new development would be required to meet current parking requirements of the LCP and Zoning Code. Refer to LUE Goals 1 through 5 and all of the Southeast Policies, as well as UDE Strategies 1–3, 5, 13, 16, and 19–22 for further discussion related to goals and policies aimed at future development in the Belmont Shore neighborhood. Therefore, the proposed project would be consistent with applicable provisions of the LCP regulating land use in the Belmont Shore area of the City.
Local Coastal Program – Naples and the Peninsula	**Consistent.** No major changes are proposed to this area. Future zoning of the commercial area of 62nd Place may contemplate a residential zone, but would allow existing commercial uses to remain consistent with the "limited commercial uses" vision in the LCP (page III-E-14). Refer to LUE Goals 1 through 5 and all of the Southeast Policies, as well as UDE Strategies 1–3, 5, 13, 16, and 19–22. Therefore, the proposed project would be consistent with applicable provisions of the LCP regulating land use in the Naples and Peninsula areas of the City.
Local Coastal Program – Southeast Area (SEASP)	**Consistent.** The proposed project supports the goals and policies outlined in the Southeast Area Specific Plan (SEASP), which was adopted by the Long Beach City Council in September 2017. The goal of this update is to bring additional land under the protection of open space/wetland/habitat protections, enhance the public's ability to visit coastal resources, enhance existing hotels and allow for new hotel construction, as well as provide employment and housing opportunities in the area. Refer to LUE Goals 1 through 5 and all of the Southeast Policies, as well as UDE Strategies 1–3, 5, 13, 16, and 19–22 for further discussion related to goals and policies aimed at future development in the SEASP neighborhood. Therefore, the proposed project would be consistent with applicable provisions of the LCP regulating land use in the SEASP area of the City.

Table A: California Coastal Act and City of Long Beach Local Coastal Program Consistency Analysis

Plan Policy or Goal	Project Consistency
Local Coastal Program – Resources Management Plan	**Consistent.** The proposed project focuses on acquisition of open space for multiple uses, including as buffer and habitat or natural areas (refer to LUE Goal 9; Policy 18-1; Strategies 19 and 20; and Implementation Strategies 84, 85, 88, 89, 97, 99, and 108, as well as UDE Strategies 17 and 29). Therefore, the proposed project would be consistent with the Resources Management Plan of the LCP.

Sources: Public Resources Code, Division 20-California Coastal Act; LSA Associates, Inc.

Table B: SCAG 2008 RCP and 2016–2040 RTP/SCS Consistency Analysis

Plan Policy or Goal	Project Consistency
SCAG 2008 Regional Comprehensive Plan	
The 2008 Regional Comprehensive Plan (RCP) addresses regional goals related to growth and infrastructure in the Southern California region. Overall, the 2008 RCP is a vision of how Southern California can balance resource conservation, economic vitality, and quality of life for residents and visitors. The 2008 RCP includes the below policies related to Land Use and Housing that are considered voluntary local government best practices, which would be consistent with the proposed project.	
Policy LU-4: Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.	**Consistent.** The proposed project includes provisions for the creation of additional housing units as necessary to fulfill the City's responsibilities under its Regional Housing Needs Assessment (RHNA) and Housing Element (refer to Goals 4 and 6; Implementation Strategies LU-M- 3, 27, and 48, as well as UDE Policy 16-1). Therefore, the proposed project would be consistent with Policy LU-4 of the 2008 RCP.
Policy LU-5: Local governments should leverage federal and State and local funds to implement the Compass Blueprint.	**Consistent.** The proposed project encourages the use of a variety of funding approaches, including grants, to fund City programs, services, and capital investments (refer to LU Policy 6-3). In addition, the proposed project encourages updating the City's greenhouse gas (GHG) emissions inventory, which would enable the City to secure future grant funding for sustainability programs (refer to Implementation Strategy LU-M-73). Therefore, the proposed project would be consistent with Policy LU-5 of the 2008 RCP.
Policy LU-6: Local governments should consider shared regional priorities, as outlined in the Compass Blueprint, Regional Transportation Plan, and this Regional Comprehensive Plan, in determining their own development goals and drafting local plans.	**Consistent.** The proposed project includes a multifaceted planning approach that considers both local community stakeholder perspectives and broader regional perspectives. In addition, the proposed project supports the future development of regional facilities, including the Long Beach Airport, the Port, Long Beach Memorial Medical Center, Long Beach City College, and California State University, Long Beach (CSULB), which generate high-quality jobs that impact employment in the region (refer to LUE Goal No. 1, Major Area of Change Nos. 3 and 6; and LUE Implementation Strategies LU-M-7, and 73-76, as well as UDE Strategies 24 and 26). Further, as detailed below in this Appendix, the proposed project would be consistent with shared regional priorities outlined in the 2016–2040 RTP/SCS. Therefore, the proposed project would be consistent with Policy LU-6 of the 2008 RCP.
SCAG 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy	
Overview. The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) provides a comprehensive outline for transportation investments throughout the SCAG region. The RTP was most recently adopted in 2016 and is updated every four years to address regional transportation needs. In order to receive State and federal funding, transportation projects must be outlined in the RTP. In addition, the SCS component of the 2016–2040 RTP aims to fulfil State commitments to reduce GHG emissions from passenger vehicles. In order to achieve these goals, the RTP/SCS encourages growth near transit services to reduce vehicle miles traveled and to encourage alternative modes of transportation. As analyzed herein, the proposed project would be consistent with the goals outlined in the 2016–2040 RTP/SCS.	
Goal 1: Align the plan investments and policies with improving regional and economic development and competiveness.	**Consistent.** The proposed project would shift from the traditional land use approach, which designates land uses on a parcel-to-parcel basis, to a more flexible land use approach through the adoption of PlaceTypes. Under the proposed PlaceTypes, property and business owners would have greater flexibility on how they can develop their properties, which in turn would encourage economic investment and redevelopment. The proposed project would also accommodate 28,511 new jobs as a result of increased opportunities for development envisioned under the project. One example of new jobs that would be facilitated by project approval would be light manufacturing jobs

Table B: SCAG 2008 RCP and 2016–2040 RTP/SCS Consistency Analysis

Plan Policy or Goal	Project Consistency
	allowed within the Neo-Industrial PlaceType. This PlaceType would be introduced within existing Industrial areas of the City. In addition, the land use goals, policies, and strategies included in the proposed Land Use Element (LUE) promote the revitalization and enhancement of commercial corridors and centers throughout the planning area to encourage economic development and competiveness within the planning area and overall region (refer to LUE Goal 2; Strategy 3; Policies 3-1, 6-1, 6-7, 6-11; and Implementation Strategies 13 through 23, as well as Urban Design Element (UDE) (UDE Strategy 8 and Policies 8-1 through 8-7). Therefore, the proposed project would be consistent with Goal 1 of the 2016–2040 RTP/SCS.
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Consistent.** The proposed project would encourage development along transit corridors and arterials and near transit stations in an effort to provide additional mobility options for residents and visitors in the planning area. The proposed project is consistent with the City's General Plan Mobility Element (2013) (refer to LUE Goals No. 1–6; Implementation Strategies LU-M-11 and 37; and North Long Beach Strategy 10, Bixby Knolls Strategy 8, Westside and Wrigley Strategy 9, Eastside Strategy 13, Central Strategy 8, Traffic Circle Strategy 9, Downtown Strategy 12, and Midshore Strategy 11; as well as UDE Strategies 42 and 43, Policies 15-3, 18-10, 31-2, 37-3, 38-8, and 40-8, and Implementation Strategy 48). For example, the project includes the establishment of the Transit-Oriented Development PlaceType, which would encourage new development along Metro Blue line stations in the City. The proposed project would also allow for mixed-uses within several of the proposed PlaceTypes to encourage compact neighborhoods that are walkable and that provide a greater number of goods and services within a closer proximity to the City's residents. By promoting alternative modes of transportation in the planning area, the proposed project aims to reduce vehicular congestion and promote an efficient, multi-modal transportation network that would maximize safety for vehicles, transit users, bicyclists, and pedestrians. The proposed project also recognizes that automobile transit may remain the preferred method of transportation for some users in the City. As such, the proposed project includes a number of policies to promote transit connections between the planning area and the regional transit system and the incorporation of transit amenities within local roadway improvements. Therefore, the proposed project would be consistent with Goal 2 of the 2016–2040 RTP/SCS.
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	**Consistent.** As previously stated, the proposed project encourages development along existing and future transit lines and near existing and future transit stops. In order to ensure the safety and reliability of transportation options in the City, the project aims to improve public infrastructure and to remedy existing deficiencies to better serve residents and visitors to the planning area (LU Policies 17-2 and 17-3). Additionally, the proposed LUE includes strategies aimed at coordinating long-range planning and infrastructure improvements to ensure there is adequate infrastructure to meet existing and future developments (Implementation Strategy LU-M-80) and to more effectively transport goods in the region.

Table B: SCAG 2008 RCP and 2016–2040 RTP/SCS Consistency Analysis

Plan Policy or Goal	Project Consistency
	Furthermore, the proposed project includes goals and policies that support the intent of the City's adopted General Plan Mobility Element (2013), which supports the creation of complete streets. Complete streets envisioned in the Mobility Element aim to accommodate all modes of transportation in a safe and convenient manner for all users. Therefore, the proposed project would be consistent with Goal 3 of the 2016–2040 RTP/SCS.
Goal 4: Preserve and ensure a sustainable regional transportation system.	**Consistent.** Please refer to the consistency analysis provided for Goal 3, above. As previously stated, the proposed project supports the goals and policies of the City's General Plan Mobility Element, which was designed in accordance with applicable transportation plans to ensure that the transportation network is consistent with the transit plan for the region. The proposed project also identifies improvements that would support improvements to the City's roadway network (e.g., improved wayfinding signage). Therefore, the proposed project would be consistent with Goal 4 of the 2016–2040 RTP/SCS.
Goal 5: Maximize the productivity of our transportation system.	**Consistent.** Please refer to the consistency analysis provided for Goal 3, above. The proposed project includes goals and policies that support the creation of neighborhoods that are well-connected to a multi-modal transportation network. Additionally, the project supports a mix of land uses to ensure neighborhoods are easily navigable by walking or biking for short trips and by passenger vehicles and transit for longer trips. In doing so, the project aims to reduce greenhouse gas (GHG) emissions and air pollutants while also recognizing the need to preserve auto mobility. Therefore, the proposed project would be consistent with Goal 5 of the 2016–2040 RTP/SCS.
Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).	**Consistent.** As previously stated, the project aims to encourage development near transit lines and stations in an effort to reduce reliance upon the private automobile in the City and to promote a multi-modal transportation network with bicycling, walking, and mass transit options. Although passenger vehicles are the preferred means of travel for many residents, the project includes goals and policies aimed at reducing vehicle miles traveled by increased pedestrian, bicycle, and transit connectivity. In turn, the project aims to improve air quality in the City and the region as a whole (LUE Strategy No. 2, and LU Policies 16-4, 16-5, 16-6, and 16-7, as well as Implementation Strategies LU-M-74 and LU-M-77). Therefore, the proposed project would be consistent with Goal 6 of the 2016–2040 RTP/SCS.
Goal 7: Actively encourage and create incentives for energy efficiency, where possible.	**Consistent.** Future development facilitated by project approval would be designed in accordance with the California Buildings Standard Code, which outlines the minimum energy standards for new buildings. These standards are updated every three years to require increased energy efficiency standards for development, with the overall intent of moving towards the goal of zero net energy for all buildings. The project also includes goals for promoting energy efficiency in an effort to reduce GHG emissions and promote renewable energy (Implementation Strategies LU-M-9, LU-M-11, LU-M-16, and LU-M-77). Additionally, the proposed UDE would encourage the use of solar panels on rooftops and the inclusion of electric vehicle (EV) charging stations within new developments (Policies UD 5-5 and UD 5-6). Therefore, the proposed project would be consistent with Goal 7 of the 2016–2040 RTP/SCS.
Goal 8: Encourage land use and growth patterns that facilitate transit and active transportation.	**Consistent.** Please refer to the consistency analysis provided for Goal 3, above. New development facilitated by project approval would

Table B: SCAG 2008 RCP and 2016–2040 RTP/SCS Consistency Analysis

Plan Policy or Goal	Project Consistency
	primarily focus on development on vacant and underutilized lots, in addition to infill development. The proposed project also includes a number of goals, policies, and strategies aimed at promoting walkability (LU Policies 7-7, 8-2, and 11-5) and increased connectivity to the City's multi-modal transportation network. Therefore, the proposed project would be consistent with Goal 8 of the 2016–2040 RTP/SCS.
Goal 9: Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	**Consistent.** SCAG does not currently have an agreed-upon security performance measure established within the 2016–2040 RTP/SCS. However, the proposed project aims to encourage land use patterns that would promote alternative modes of transportation, which in turn would reduce vehicular congestion, improve mobility, and promote a more secure transportation system within the planning area. As discussed under the consistency analysis for Goal 3 (above), the project also aims to improve existing deficiencies in the transportation system and would monitor future infrastructure improvements to maximize the efficiency of the transportation system. As such, the project would not interfere with improved system monitoring, rapid recovery planning, or coordination with security agencies associated with the regional transportation system. Therefore, the proposed project would be consistent with Goal 9 of the 2016–2040 RTP/SCS.
Policy 3: RTP/SCS land use and growth strategies in the RTP/SCS would respect local input and advance smart growth initiatives.	**Consistent.** As described further in Section 4.6, Population and Housing, of this Recirculated Draft Environmental Impact Report (EIR), the City provided input to SCAG regarding existing and projected socioeconomic characteristics and land use patterns in the planning rea. This input was then utilized by SCAG when drafting the 2016–2040 RTP/SCS. Socioeconomic growth projections provided in the 2016–2040 RTP/SCS were subsequently incorporated into the proposed LUE to ensure consistency with regional transit and growth plans for the planning area and the region. Therefore, the proposed project would be consistent with Policy 3 of the 2016–2040 RTP/SCS.
Policy 4: Transportation demand management (TDM) and active transportation would be focus areas, subject to Policy 1.	**Consistent.** The proposed project would further goals and strategies included in the City's General Plan Mobility Element that are aimed at reducing vehicle miles travelled through the use of alternative modes of transportation and TDM programs. For example, the project would encourage the use of TDM programs that would include shared or consolidated parking facilities, employee shuttles, preferential parking for vanpools, and other measures to prevent off-site spillover parking from uses within the Regional-Serving Facility PlaceType. The proposed project would also encourage the provision of various transportation modes within this PlaceType to ensure adequate access for both visitors and daily users. Therefore, the proposed project would be consistent with Policy 4 of the 2016–040 RTP/SCS.
Policy 5: HOV gap closures that significantly increase transit and rideshare usage would be supported and encouraged, subject to Policy 1.	**Consistent.** Although the proposed project does not include any high occupancy vehicle (HOV) gap closures, the proposed project would further goals and strategies included in the City's General Plan Mobility Element aimed at improving the City's multi-modal transportation network and transit ridership in the City. Therefore, the proposed project would be consistent with Policy 5 of the 2016–2040 RTP/SCS.
Policy 6: The RTP/SCS would support investments and strategies to reduce non-recurrent congestion and	**Consistent.** The proposed project encourages development near transit lines and stations in an effort to reduce reliance upon the

Table B: SCAG 2008 RCP and 2016–2040 RTP/SCS Consistency Analysis

Plan Policy or Goal	Project Consistency
demand for single occupancy vehicle use, by leveraging advanced technologies.	private automobile in the City and to promote a multi-modal transportation network with bicycling, walking, and mass transit options. Although passenger vehicles are the preferred means of travel for many residents, the project includes goals and policies aimed at reducing vehicle miles traveled by increased pedestrian, bicycle, and transit connectivity. In turn, the project aims to improve air quality in the City and the region as a whole (LUE Strategy No. 2, and LU Policies 16-4 and 16-7, as well as Implementation Strategies LU-M-74 and LU-M-77). Therefore, the proposed project would be consistent with Policy 6 of the 2016–2040 RTP/SCS.
Policy 7: The RTP/SCS would encourage transportation invest-ments that result in cleaner air, a better environment, a more efficient transportation system, and sustain-able outcomes in the long run.	**Consistent.** The proposed project would further goals and policies outlined in the City's General Plan Mobility Element that are aimed at improving transit ridership through transportation investments (MOP Policy 1-11) and reducing vehicle miles traveled and GHG emissions. Therefore, the proposed project would be consistent with Policy 7 of the 2016–2040 RTP/SCS.
Policy 8: Monitoring progress on all aspects of the Plan, including the timely implementation of projects, programs, and strategies, would be an important and integral com-ponent of the Plan.	**Consistent.** The proposed project would not interfere with monitoring progress associated with the 2016–2040 RTP/SCS, but rather would further SCAG's objective of increasing multi-modal connectivity between the planning area and the SCAG region. Therefore, the proposed project would be consistent with Policy 8 of the 2016–2040 RTP/SCS.

Source: SCAG, 2016–2040 RTP/SCS. City of Long Beach, Land Use and Urban Design Elements (March 2018).
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Historic Preservation Element (2010)	
Overview. The proposed project would focus areas of change and growth outside of established historic districts in the planning area. In addition, the project would encourage the retention of historic structures and landmarks (refer to Land Use Element [LUE] Goal 4; Implementation Strategies LU-M-3, and LU-M-43; Midshore Strategies 3, 7, and 8; and Southeast Strategy 3, as well as Urban Design Element (UDE) Strategies 9 and 10; Policies UD 2-1, UD 9-1 through 9-3; UD 10-1, UD 10-3, UD 14-8, UD 19-1, UD 19-4, UD 20-2, and UD 20-5, and Implementation Strategy 45). Therefore, the proposed project would be consistent with the overall intention of the City's General Plan Historic Preservation Element.	
Goal No. 1: Maintain and support a comprehensive, citywide historic preservation program to identify and protect Long Beach's historic, cultural, and archaeological resources.	**Consistent.** The proposed project focuses areas of change and growth outside of established historic districts. In addition, the project would encourage the retention of historic structures and landmarks (refer to LUE Goal 4; Implementation Strategies LU-M-3 and LU-M-43; Neighborhood Strategies Midshore Strategies 3, 7, and 8; and Southeast Strategy 3, as well as and UDE Strategies 9 and 10; Policies UD 2-1, UD 9-1 through 9-3; UD 10-1, UD 10-3, UD 14-8, UD 19-1, UD 19-4, UD 20-2, and UD 20-5, and Implementation Strategy 45). Therefore, the proposed project would be consistent with Goal No. 1 of the Historic Preservation Element.
Goal No. 2: Protect historic resources from demolition and inappropriate alterations through the use of the City's regulatory framework, technical assistance, and incentives.	**Consistent.** Demolition policies would be unchanged by the proposed project. In addition, the project would encourage the retention of historic structures and landmarks (refer to LUE Goal 4; Implementation Strategies LU-M-3 and LU-M-43; Midshore Strategies 3, 7, and 8; and Southeast Strategy 3, as well as and UDE Strategies 9 and 10; Policies UD 2-1, UD 9-1 through 9-3; UD 10-1, UD 10-3, UD 14-8, UD 19-1, UD 19-4, UD 20-2, and UD 20-5, and Implementation Strategy 45). Furthermore, the City's historic preservation program includes the Mills Act, façade improvement rebates, and other preservation incentives. Additionally, new development with discretionary actions would be required to undergo review pursuant to the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA), which would prevent the loss of historic structures through demolition. Therefore, the proposed project would be consistent with Goal No. 2 of the Historic Preservation Element.
Goal No. 3: Maintain and expand the inventory of historic resources in Long Beach.	**Consistent.** Specific neighborhood strategies are included in the proposed LUE to include future surveys of historic structures in the Midshore and Southeast areas, and to encourage the protection of existing historic structures and landmarks in the City landmarks (refer to LUE Goal 4; Implementation Strategies LU-M-3 and LU-M-43; Midshore Strategies 3, 7, and 8; and Southeast Strategy 3, as well as and UDE Strategies 9 and 10; Policies UD 2-1, UD 9-1 through 9-3; UD 10-1, UD 10-3, UD 14-8, UD 19-1, UD 19-4, UD 20-2, and UD 20-5, and Implementation Strategy 45). Furthermore, the City's existing Historic Preservation Program continues to add new landmarks each year to protect the City's architectural and cultural history. Therefore, the proposed project would be consistent with Goal No. 3 of the Historic Preservation Element.
Goal No. 4: Increase public awareness and appreciation of the City's history and historic, cultural, and archaeological resources.	**Consistent.** The City's existing preservation program would be complemented by the proposed project, which strives to better educate and orient residents and visitors to amenities within the City, including historic resources (refer to LUE Bold Move 4, Policy 3-5, Implementation Strategy LU-M-39, as well as Policy UD 12-2). Therefore, the proposed project would be consistent with Goal No. 4 of the Historic Preservation Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 5: Integrate historic preservation policies into City's community development, economic development, and sustainable-city strategies.	**Consistent.** The proposed project focuses areas of change and growth outside of established historic districts and would maintain existing protections of historic landmarks (refer to LUE Goal 4; Implementation Strategies LU-M-3 and LU-M-43; Neighborhood Strategies Midshore Strategies 3, 7, and 8; and Southeast Strategy 3, as well as and UDE Strategies 9 and 10; Policies UD 2-1, UD 9-1 through 9-3; UD 10-1, UD 10-3, UD 14-8, UD 19-1, UD 19-4, UD 20-2, and UD 20-5, and Implementation Strategy 45). In addition, the City is currently preparing the Climate Action and Adaptation Plan (CAAP), which includes implementation strategies to weatherize and improve energy efficiency within historic structures while still preserving the historic resource, consistent with the Secretary of the Interior's Standards for Rehabilitation. Therefore, the proposed project would be consistent with Goal No. 5 of the Historic Preservation Element.
Open Space and Recreation Element (2002)	
Overview. The proposed project would establish the Open Space PlaceType, which would preserve existing open space and recreational facilities throughout the City. In addition, the proposed project establishes More Open Space as a Major Area of Change, which focuses on acquisition of open space for multiple uses, including as buffer and habitat or natural areas (refer to LUE Major Area of Change No. 1, Goal No. 9; Policies 16-6, 18-1, 18-5, 19-1, and 20-1; and Implementation Strategies LU-M-37 and LU-M-88; as well as Policies UD 3-1, 19-3, and 30-1). Therefore, the proposed project would be consistent with the overall intention of the City's General Plan Open Space and Recreation Element.	
Goal No. 1: Open space for the preservation of natural resources.	**Consistent.** The proposed project focuses on acquisition of open space for multiple uses, including as buffer and habitat or natural areas (refer to LUE Major Area of Change No. 1, Goal No. 9; Policies 16-6, 18-1, 18-5, 19-1, and 20-1; and Implementation Strategies LU-M-37 and LU-M-88; as well as Policies UD 3-1, 19-3, and 30-1). Therefore, the proposed project would be consistent with Goal No. 1 of the Open Space and Recreation Element.
Goal No. 2: Open space for the managed production of resources.	**Consistent.** The proposed project applies sustainability standards to protect and enhance water and other natural resources (refer to LUE Major Area of Change No. 1, Goal No. 9; Policies 16-6, 18-1, 18-5, 19-1, and 20-1; and Implementation Strategies LU-M-37 and LU-M-88, as well as Policies UD 3-1, 19-3, and 30-1). Therefore, the proposed project would be consistent with Goal No. 2 of the Open Space and Recreation Element.
Goal No. 3: Open space for public health and safety.	**Consistent.** The proposed project seeks to increase the amount of open space, including as a buffer between noxious and sensitive uses. In addition, the project supports farmers markets to increase access to healthy food options (refer to LUE Goal 1, North Long Beach Strategy 3, Westside and Wrigley Strategies 5, and 6, as well as UDE Strategies 14 and 17, and Policies 24-3, 24-8, and 24-9). Therefore, the proposed project would be consistent with Goal No. 3 of the Open Space and Recreation Element.
Goal No. 4: Open space for recreation and recreational facilities.	**Consistent.** The proposed project seeks to increase open space through park fees, the reuse of underutilized land, and innovative use of small spaces such as parklets. With this approach, parks of all sizes would be created as resources become available (refer to LUE Goals No. 3 and 8; Major Area of Change No. 1; Strategy No. 18, Policies 9-1, 10-5; 18-1, 18-5, 18-6; 19-1, and Implementation Strategies LU-M-37 and LU-M-84-96, as well as UDE Strategies 14, 17, 17, and 30-33; Policies 5-3, 21-7, 24-8, 34-1, and 34-8; and Implementation Strategy 63). Therefore, the proposed project would be consistent with Goal No. 4 of the Open Space and Recreation Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Housing Element (2014)	
Overview. The proposed project would allow for the development of new housing units and would encourage improvement of existing residential uses in an effort to provide a variety of housing options at varying income levels to meet the needs of all residents in the planning area. Refer to LUE Goals 4 and 6; Policy 16-5; and Implementation Strategies LU-M-3, 27, 47, as well as UDE Policy 16-1. Therefore, the proposed project would be consistent with the overall intention of the City's General Plan Housing Element.	
Goal No. 1: Provide housing assistance and preserve publicly assisted units.	**Consistent.** The proposed project focuses on creating new housing units and improving services and the built environment in existing disadvantaged communities (refer to LUE Goals 4 and 6; Policy 16-5; and Implementation Strategies LU-M-3, 27, and 47, as well as UDE Policy 16-1). Therefore, the proposed project would be consistent with Goal No. 1 of the Housing Element.
Goal No. 2: Address the unique housing needs of special needs residents.	**Consistent.** The proposed project focuses on creating new housing units, including units for those individuals with special needs. Through the implementation of the Americans with Disabilities Act (ADA), concepts of universal design and a focus on creating diverse housing for a diverse population, the proposed project would improve the availability of housing for those with special needs (refer to LUE Goals 4 and 6; Goals 4-6, and Policies 12-1 through 12-7, as well as UDE Policy 1-8). Therefore, the proposed project would be consistent with Goal No. 2 of the Housing Element.
Goal No. 3: Retain and improve the quality of existing housing and neighborhoods.	**Consistent.** The proposed project focuses growth along transit corridors and other major areas of change, not within existing neighborhoods. The proposed project also includes policies aimed at protecting existing neighborhoods and existing programs, such as the façade improvement program (refer to LUE Goals 1, 4, 5, and 6; Policies 16-7, 16-2, and 16-5; and Implementation Strategies LU-M-29, 35-38, and 43, as well as UDE Strategies 1-3, 13, 19-20). Therefore, the proposed project would be consistent with Goal No. 3 of the Housing Element.
Goal No. 4: Provide increased opportunities for the construction of high quality housing.	**Consistent.** The proposed project includes provisions for new housing consistent with the production goals found in the Housing Element and RTP/SCS. Housing production is targeted in Downtown, Transit-Oriented Development (TOD) corridors, major bus-route mixed-use corridors, within existing multifamily areas such as Alamitos Beach, within regional opportunity sites, such as PD-1 (Southeast Long Beach), and near the traffic circle. Appropriate modest increases in height and intensity are included in these areas (refer to LUE Goals 1-5, as well as UDE Strategies 3, 16, and 20-22). Therefore, the proposed project would be consistent with Goal No. 4 of the Housing Element.
Goal No. 5: Mitigate government constraints to housing investment and affordability.	**Consistent.** The proposed project includes a map of PlaceTypes and heights, as well as an implementation program for those changes. Implementation of the proposed project, as well as certification of this Recirculated Draft Program EIR, provides opportunities to streamline the future development of housing. Improving certainty, reducing the timeline of the development process, and including modest increases in height and intensity would all contribute to reducing governmental constraints and improving the ability to create housing of all types and for all income levels (refer to LUE Goals 1-6, and Implementation Strategies LU-M-3, 26, 27, 45, as well as UDE Strategies 5, 16, and 20-22). Therefore, the proposed project would be consistent with Goal No. 5 of the Housing Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 6: Provide increased opportunities for home ownership.	**Consistent.** Through promotion of creating all types of housing for all types of families, the proposed project would increase the opportunity for home ownership. Home ownership is a function of availability of housing for sale, but also affordability and economic opportunity. The proposed project promotes both housing and job growth, which is anticipated to improve home ownership in the planning area (refer to LUE Goals 1-5, as well as UDE Strategies 5, 16, and 20-22). Therefore, the proposed project would be consistent with Goal No. 6 of the Housing Element.
Goal No. 7: Fair and equal housing opportunity.	**Consistent.** Existing programs to ensure fair housing would continue under the proposed project. Through promotion of creating all types of housing for all types of families, the proposed project would increase the overall access to, affordability, and accessibility of housing to all persons. The proposed project promotes both housing and job growth, which should provide the foundation for improved home ownership (refer to LUE Goals 1-5, as well as UDE Strategies 5, 16, and 20-22). Therefore, the proposed project would be consistent with Goal No. 7 of the Housing Element.
Air Quality Element (1996)	
Overview. The LUE implementation program includes creation of a CAAP in the immediate short term, which is already underway. Once completed, this CAAP would replace the City's optional Air Quality Element. In the interim, the proposed LUE and UDE are consistent with the Air Quality Element adopted in 1996. Four goals guide the Air Quality Element: achieve air quality improvements in such a manner that sustains current economic development while encouraging future growth; improve the quality of life for our citizens by providing greater opportunities, convenience, and choices; reinforce local mobility goals by reducing peak-hour traffic congestion; and foster behavior change through public information and education, incentives and pricing that reflects total societal costs for administration and enforcement. The LUE starts with Goal No. 1, which aims to implement sustainable planning and development practices. The LUE and UDE address sustainability throughout each element, and the creation of the CAAP would further the Air Quality Element's intent. Land Use policies related to climate change and sustainability are summarized in the appendix, Chapter 7, of the LUE.	
Goal No. 1: Effective coordination of air quality improvement efforts in the South Coast Air Basin, the Southeast Los Angeles County (SELAC) subregion of SCAG, and other agencies.	**Consistent.** The 2016 EIR for the proposed project was provided for comment to the South Coast Air Quality Management District (SCAQMD), as well as the local Council of Governments (COG) (now Gateway Cities COG) and SCAG. This Recirculated Draft EIR would also be distributed to the SCAQMD, the Gateway Cities COG, and SCAG. Additionally, the project proposes the creation and implementation of the CAAP that would be drafted in consultation with all stakeholders, including the SCAQMD, the Gateway Cities, and SCAG (refer to LUE Goals 1, 3, 4, 7, and 9, and Implementation Strategies 50-53, and 72, as well as UDE Strategy 70). Therefore, the proposed project would be consistent with Goal No. 1 of the Air Quality Element.
Goal No. 2: A diverse and efficient ground transportation system that minimizes air pollutant emissions.	**Consistent.** The transportation system is primarily addressed in the City's General Plan Mobility Element; however, there are supporting policies in the proposed LUE and UDE that promote complete streets and focus on land use and design features that promote walking, biking, and transit use (refer to LUE Goals 1 and 6; North Long Beach Strategy 10, Bixby Knolls Strategy 8, Westside and Wrigley Strategy 9, Eastside Strategy 13, Central Strategy 8, Traffic Circle Strategy 9, Downtown Strategy 12, and Midshore Strategy 11; and Implementation Strategy LU-M-11, as well as Strategies 42 and 43, Policies 15-3, 18-10, 31-2, 37-3, 38-8, and 40-8, and Implementation Strategy 48). Therefore, the proposed project would be consistent with Goal No. 2 of the Air Quality Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 3: Minimize feasible emissions from Long Beach Airport.	**Consistent.** The Long Beach Airport is primarily regulated by the Federal Aviation Administration (FAA) and an adopted Airport Land Use Plan. However, the Airport is also regulated by the City's General Plan Mobility Element and associated rules and regulations. However, the proposed project supports regional uses including the sustainable use of the Airport (refer to LUE Goals No. 1, 3 (Major Area of Change No. 3), and 6, as well as UDE Implementation Strategies 46 and 47). Therefore, the proposed project would be consistent with Goal No. 3 of the Air Quality Element.
Goal No. 4: Minimum feasible emissions from the Ports of Long Beach and Los Angeles.	**Consistent.** Emissions from the Port are primarily regulated through the City's General Plan Mobility Element, the Green Port Plan, the CAAP, and related regulations. In addition, the proposed project supports the sustainable use of regional facilities and industrial areas including the Port (refer to LUE Goals No. 1, Major Area of Change No. 3 and 6; LUE Implementation Strategies LU-M-7, and 73-76, as well as UDE Strategies 24 and 26). Therefore, the proposed project would be consistent with Goal No. 4 of the Air Quality Element.
Goal No. 5: A pattern of land uses that can be efficiently served by a diversified transportation system and that directly and indirectly minimizes air pollutants.	**Consistent.** The proposed project seeks to complement the City's General Plan Mobility Element by concentrating new development in Downtown and along bus and rail corridors. Under the design provisions of the proposed project, all new development would include features to encourage biking, walking, and transit use (refer to LUE Goals 1 and 6; North Long Beach Strategy 10, Bixby Knolls Strategy 8, Westside and Wrigley Strategy 9, Eastside Strategy 13, Central Strategy 8, Traffic Circle Strategy 9, Downtown Strategy 12, and Midshore Strategy 11; and Implementation Strategy LU-M-11, as well as Strategies 42, 43, Policies 15-3, 18-10, 31-2, 37-3, 38-8, 40-8, and Implementation Strategy 48). Therefore, the proposed project would be consistent with Goal No. 5 of the Air Quality Element.
Goal No. 6: Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling, and storage of materials.	**Consistent.** Sustainability is a foundation for all goals and policies in the proposed project (refer to LUE Goals No. 1, 3, and 6-9; Strategy No. 2, Policy 16-4, and Implementation Strategies 72, and 74-79, as well as UDE Strategy 70). While the emissions factors of vehicles are outside the jurisdiction of the City of Long Beach, the proposed project does include provisions for walking, biking, and transit use as a mechanism to reduce the vehicle miles travelled (VMT) in the City and associated emissions (including particulate emissions). Furthermore, the implementation program includes the preparation of a CAAP, which is already being prepared. The focus of the CAAP is to reduce greenhouse gas (GHG) emissions but it is anticipated to have co-benefits including reductions in criteria pollutants, such as particulate emissions. Therefore, the proposed project would be consistent with Goal No. 6 of the Air Quality Element.
Goal No. 7: Reduce emissions through reduced energy consumption.	**Consistent.** The proposed project focuses on compact, sustainable, and energy-efficient new development, as well as enhancements to existing neighborhoods such as energy retrofits and installation of rooftop solar systems (refer to LUE Strategy No. 2; Policies 1-6, 2-1, 4-1, 11-2, and 16-7, and Implementation Strategies LU-M-3, 9-13, and 59-69, as well as UDE Policies 5-5 and 5-10). Therefore, the proposed project would be consistent with Goal No. 7 of the Air Quality Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 8: Education of the City residents concerning air quality, energy, and congestion issues, and the need to modify present travel behavior and energy consumption patterns.	**Consistent.** Existing education programs would continue and be enhanced by the proposed project's focus on creating sustainable communities (refer to LUE Goals 1 and 6; North Long Beach Strategy 10, Bixby Knolls Strategy 8, Westside and Wrigley Strategy 9, Eastside Strategy 13, Central Strategy 8, Traffic Circle Strategy 9, Downtown Strategy 12, and Midshore Strategy 11; and Implementation Strategy LU-M-11, as well as Strategies 42 and 43, Policies 15-3, 18-10, 31-2, 37-3, 38-8, and 40-8, and Implementation Strategy 48). Therefore, the proposed project would be consistent with Goal No. 8 of the Air Quality Element.
Mobility Element (2013)	
Overview. The proposed project would further the goals of the City's General Plan Mobility Element by concentrating new development in Downtown and along bus and rail corridors. The project also includes design provisions to encourage biking, walking, and transit use (refer to LUE Goals No. 1-6; Implementation Strategies LU-M-11 and 37; and North Long Beach Strategy 10, Bixby Knolls Strategy 8, Westside and Wrigley Strategy 9, Eastside Strategy 13, Central Strategy 8, Traffic Circle Strategy 9, Downtown Strategy 12, and Midshore Strategy 11; as well as UDE Strategies 42 and 43, Policies 15-3, 18-10, 31-2, 37-3, 38-8, and 40-8 and Implementation Strategy 48). Therefore, the proposed project would be consistent with the overall intent of the City's General Plan Mobility Element.	
Goal No. 1: Create an efficient, balanced, multimodal mobility network.	**Consistent.** The proposed project seeks to complement the City's General Plan Mobility Element by concentrating new development in Downtown and along bus and rail corridors. Under the design provisions of the proposed project, all new development would include features to encourage biking, walking, and transit use (refer to LUE Goals No. 1-6; Implementation Strategies LU-M-11 and 37; and North Long Beach Strategy 10, Bixby Knolls Strategy 8, Westside and Wrigley Strategy 9, Eastside Strategy 13, Central Strategy 8, Traffic Circle Strategy 9, Downtown Strategy 12, and Midshore Strategy 11; as well as UDE Strategies 42 and 43, Policies 15-3, 18-10, 31-2, 37-3, 38-8, and 40-8, and Implementation Strategy 48). Therefore, the proposed project would be consistent with Goal No. 1 of the Mobility Element.
Goal No. 2: Maintain and enhance air, water, and ground transportation capacity.	**Consistent.** The proposed project utilizes the network established in the City's General Plan Mobility Element and distributes land uses by PlaceType around the City. The proposed project focuses on walkable corridors of mixed-use activity, but also economic development anchored by regional facilities such as the Port, Airport, and other significant regional facilities. The Waterfront PlaceType includes transportation-related provisions (including water transportation) to enhance mobility citywide (refer to LUE Goals No. 1–6; Implementation Strategies LU-M-11 and 37; and North Long Beach Strategy 10, Bixby Knolls Strategy 8, Westside and Wrigley Strategy 9, Eastside Strategy 13, Central Strategy 8, Traffic Circle Strategy 9, Downtown Strategy 12, and Midshore Strategy 11; as well as UDE Strategies 42 and 43, Policies 15-3, 18-10, 31-2, 37-3, 38-8, and 40-8; and Implementation Strategy 48). Therefore, the proposed project would be consistent with Goal No. 2 of the Mobility Element.
Goal No. 3: Lead the region by example with innovative and experimental practices.	**Consistent.** The proposed project continues the current mobility approach including experimental approaches to repurposing right-of-way and applying complete streets principles. PlaceTypes, such as Neo-Industrial, represent an innovative approach to creating and retaining employment while reducing the environmental impacts of those companies (refer to LUE Goals No. 3, 7, and 8, as well as UDE Policy 6-3). Therefore, the proposed project would be consistent with Goal No. 3 of the Mobility Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Seismic Safety Element (1988)	
Overview. The proposed project would be implemented through the regulations outlined in the Zoning Code (Title 21) and Building Code, both of which include provisions for seismic safety. In addition, the City intends to update the Safety Element of the General Plan in the near future as resources are available (refer to LUE Goals 1-4, and Policies 16-2 and 17-2, as well as UDE Policy 6-3). Therefore, the proposed project would be consistent with the overall intent of the City's General Plan Seismic Safety Element.	
Management Goal No. 1: Develop implementable mechanisms for a more stringent review of the earthquake potential associated with various projects.	**Consistent.** This goal has already been implemented by the City and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4, and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the regulations outlined in the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. In addition, upon completion of the CAAP, the City, based on available resources, will update the Safety Element of the General Plan. Therefore, the proposed project would be consistent with Management Goal No. 1 of the Seismic Safety Element.
Management Goal No. 2: Coordinate and cooperate with other political jurisdictions in implementing seismic safety programs.	**Consistent.** This goal has already been implemented by the City and is reflected in existing programs and regulations. However, please also refer to LUE Goal No. 7 and UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. In addition, the City co-operates with surrounding jurisdictions, the Gateway Cities COG, and the County of Los Angeles in preparing for emergencies such as a major seismic event. Therefore, the proposed project would be consistent with Management Goal No. 2 of the Seismic Safety Element.
Management Goal No. 3: Establish seismic safety guidelines to evaluate all potential hazards and mitigate existing problems.	**Consistent.** This goal has already been implemented by the City and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4, and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. In addition, upon completion of the CAAP, the City, based on available resources, will update the Safety Element of the General Plan to further enhance the City's approach to mitigating existing threats. Therefore, the proposed project would be consistent with Management Goal No. 3 of the Seismic Safety Element.
Development Goal No. 1: Utilize seismic safety considerations as a means of encouraging and enhancing desired land use patterns.	**Consistent.** This goal has already been implemented by the City and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4, and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) as well as the Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. Therefore, the proposed project would be consistent with Development Goal No. 1 of the Seismic Safety Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Development Goal No. 2: Provide an urban environment, which is as safe as possible from seismic risk.	**Consistent.** This goal has already been implemented by the City and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4, and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project is implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. Therefore, the proposed project would be consistent with Development Goal No. 2 of the Seismic Safety Element.
Development Goal No. 3: Use physical planning as a means of achieving greater degrees of protection from seismic safety hazards.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4, and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures to new structures built at higher levels of seismic safety. In addition, upon completion of the CAAP, the City, based on available resources, will update the Safety Element of the General Plan to further enhance the City's approach to mitigating existing threats. Therefore, the proposed project would be consistent with Development Goal No. 3 of the Seismic Safety Element.
Development Goal No. 4: Encourage development that would be most in harmony with nature and thus less vulnerable to earthquake damage.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4, Goal 9, and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. In addition, upon completion of the CAAP, the City, based on available resources, will update the Safety Element of the General Plan to further enhance the City's approach to mitigating existing threats. Therefore, the proposed project would be consistent with Development Goal No. 4 of the Seismic Safety Element.
Development Goal No. 5: Strive to encourage urbanization patterns which preserve and/or create greater earthquake safety for residents and visitors.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4 and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) as well as the Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. In addition, upon completion of the CAAP, the City, based on available resources, will update the Safety Element of the General Plan to further enhance the City's approach to mitigating existing threats. Therefore, the proposed project would be consistent with Development Goal No. 5 of the Seismic Safety Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Protection Goal No. 1: Reduce public exposure to seismic risks.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4 and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) as well as the Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. In addition, upon completion of the CAAP, the City, based on available resources, will update the Safety Element of the General Plan to further enhance the City's approach to mitigating existing threats. Therefore, the proposed project would be consistent with Protection Goal No. 1 of the Seismic Safety Element.
Protection Goal No. 2: Reduce the potential adverse economic, environmental, and social conditions which could result from a major earthquake.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4 and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. In addition, the City co-operates with surrounding jurisdictions, the Gateway Cities COG, and the County of Los Angeles in preparing for emergencies such as a major seismic event. Therefore, the proposed project would be consistent with Protection Goal No. 2 of the Seismic Safety Element.
Protection Goal No. 3: Assure continued economic stability and growth by minimizing potential seismic hazards.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. However, please also refer to LUE Goals 1-4 and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. Therefore, the proposed project would be consistent with Protection Goal No. 3 of the Seismic Safety Element.
Protection Goal No. 4: Inform the public of existing or potential seismic hazards and what to do in times of earthquake events.	**Consistent.** Existing programs including the City's Community Emergency Response Team (CERT) and neighborhood outreach around preparedness currently meet this goal. These programs would continue under the proposed project (refer to LUE Strategy No. 15 and UDE Policy 6-3). Therefore, the proposed project would be consistent with Protection Goal No. 4 of the Seismic Safety Element.
Protection Goal No. 5: Provide the maximum feasible level of seismic safety protection services.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. Please also refer to LUE Goals 1-4, Goal 7, and Policies 16-2 and 17-2, as well as UDE Policy 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. Existing programs also assist property owners with undertaking rehabilitation projects such as foundation bolting. Therefore, the proposed project would be consistent with Protection Goal No. 5 of the Seismic Safety Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Remedial Action Goal No. 1: Eliminate or reconstruct uses and structures which pose seismic risks.	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. Please also refer to LUE Policies 6-6 and 7-1 and Southeast Strategy 6, as well as UDE Policies 6-1 and 6-3. The proposed project would be implemented through the Zoning Code (Title 21) and Building Code. These codes include provisions for seismic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of seismic safety. In addition, upon completion of the CAAP, the City, based on available resources, will update the Safety Element of the General Plan to further enhance the City's approach to mitigating existing threats. Therefore, the proposed project would be consistent with Remedial Action Goal No. 1 of the Seismic Safety Element.
Noise Element (1975)	
Overview. The proposed project promotes an active, sustainable environmental with a high quality of life. Limiting noise exposure, while still allowing positive activity is part of implementing the proposed project (refer to LUE Goals 1, 4, Policies 16-6 through 16-8, Bixby Knolls Strategy 1, and Westside and Wrigley Strategy 6, as well as UDE Policies 14-5 and 23-1). The Noise Element contains various goals related to different sections of the General Plan. The Land Use Planning goals are analyzed herein. Additionally, the City is currently updating the 1975 Noise Element as part of its overall General Plan update process. Therefore, the proposed project would be consistent with applicable provisions in the Noise Element.	
Goal No. 1: Provide the City with limited maximum noise levels by judicious land use planning policies.	**Consistent.** The PlaceType map and supporting policies were created with consideration of the existing built environment and the natural setting. Different urban forms are available throughout the City, thereby providing residents and visitors the opportunity to make an informed decision to visit or live in a more boisterous environment (e.g., Downtown) or a more sedate environment (e.g., Founding and Contemporary Neighborhoods PlaceType) (refer to LUE Goals 1, 4, and 7; Bixby Knolls Strategy 1, and Westside and Wrigley Strategy 6, as well as UDE Policies 14-5 and 23-1). This Program EIR also includes an evaluation of potential noise impacts resulting from project implementation (refer to Section 4.5, Noise, and Appendix D). Therefore, the proposed project would be consistent with Goal No. 1 of the Noise Element.
Goal No. 2: Develop standards for local fixed point noise sources.	**Consistent.** This goal has already been implemented through the City's adoption and enforcement of the Noise Ordinance. Maximum noise levels, hours of activity and noise, and construction hours are all currently regulated. The proposed project continues these existing programs (refer to LUE Goal 4, as well as UDE Policies 14-5 and 23-1). Therefore, the proposed project would be consistent with Goal No. 2 of the Noise Element.
Goal No. 3: Set measurable goals for the reduction of noise in problem areas.	**Consistent.** The City has established noise regulations. Additionally the proposed project contemplates increased open space and buffers from noxious uses. The proposed project also contemplates changes to industrial areas that are adjacent to residential neighborhoods, allowing for a reduction in impacts over time (refer to LUE Goals 1 through 4, 6, 8, and 9; Bixby Knolls Strategy 1, and Westside and Wrigley Strategy 6, as well as UDE Policies 14-5 and 23-1). Therefore, the proposed project would be consistent with Goal No. 3 of the Noise Element.
Goal No. 4: Propose land uses or activities that would act as buffer zones between incompatible land uses.	**Consistent.** The proposed project includes provisions for increased open-space and buffers to reduce land-use conflicts including noise (refer to LUE Goals 1, 3, 8, and 9, as well as UDE Policies 14-5 and 23-1). Therefore, the proposed project would be consistent with Goal No. 4 of the Noise Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 5: Consider existing ambient noise levels before establishing specific permitted levels of sound.	**Consistent.** This goal has already been implemented through the City's adoption and enforcement of the Noise Ordinance. Maximum noise levels, hours of activity and noise, and construction hours are all currently regulated. The Noise Ordinance measures noise in the context of existing ambient levels. The proposed project continues these existing programs (refer to LUE Goals 1, 3, 8, and 9; Bixby Knolls Strategy 1, and Westside and Wrigley Strategy 6, as well as UDE Strategies 14 and 17 and Policies 23-1, 23-6, 24-3, 24-8, 24-9, 25-1, and 38-4). Therefore, the proposed project would be consistent with Goal No. 5 of the Noise Element.
Goal No. 6: Locate and mitigate noise impacts from highways and freeways on residential land uses and institutional, recreational and school facilities.	**Consistent.** This goal has already been implemented through the City's adoption and enforcement of the Noise Ordinance. Maximum noise levels, hours of activity and noise, as well as construction hours are all currently regulated. The proposed project continues these existing programs while seeking to calm traffic and provide increased buffers between residents and noise sources, including roadways (refer to LUE Goal 4, as well as UDE Policies 14-5 and 23-1). Therefore, the proposed project would be consistent with Goal No. 6 of the Noise Element.
Goal No. 7: Identify and anticipate existing or proposed land uses that cause (directly or indirectly) noise-generating activities.	**Consistent.** The proposed project includes provisions for increased open-space and buffers to reduce land-use conflicts including noise (refer to LUE Goals 1, 3, 8, and 9, as well as UDE Strategies 14 and 17 and Policies 23-1, 23-6, 24-3, 24-8, 24-9, 25-1, 38-4). Therefore, the proposed project would be consistent with Goal No. 7 of the Noise Element.
Goal No. 8: Promote the health and well-being of the people of Long Beach by adopting standards for the proper balance, relationship, and distribution of the various types of land uses.	**Consistent.** This goal has already been implemented. PlaceTypes have been distributed around the City based on existing conditions, transportation corridors and the jobs and housing projections set in the RTP/SCS (refer to Map 6 in the proposed LUE and Map 2 in the proposed UDE). Therefore, the proposed project would be consistent with Goal No. 8 of the Noise Element.
Goal No. 9: Protect business and industrial areas against intrusion of non-business or non-industrial land uses which are highly sensitive to noise.	**Consistent.** The proposed project does not allow residential uses within the Community Commercial or Open Space PlaceTypes and restricts residential uses within the Neo-Industrial PlaceType to the adaptive reuse of existing buildings. The proposed project seeks to maintain and expand existing employment (refer to LUE Goal 2, as well as UDE Strategies 24 and 25 and Policies 5-10 and 24-8). Therefore, the proposed project would be consistent with Goal No. 9 of the Noise Element.
Public Safety Element (1975)	
Overview. The 1975 Public Safety Element contains goals relating to multiple areas of the General Plan and City operations. The development goals are analyzed herein. Additionally, upon completion of the CAAP and dependent on available resources, the City intends to update the Safety Element consistent with Senate Bill (SB) 379 (refer to LUE Goal 4 and UDE Policies 6-3 and 41-7). Therefore, the proposed project would be consistent with the Public Safety Element.	
Goal No. 1: Promote the redevelopment of areas, which may present safety problems.	**Consistent.** The proposed project includes provisions for safety, as well as design features to improve safety through new development. The proposed project focuses growth in transit corridors and other major areas of change. The LUE is implemented through the Zoning Code, including crime prevention through environmental design provisions applied during the City's Site Plan review process (refer to LUE Goals 2 and 3, as well as UDE Strategy 7 and Implementation Strategy 50). Therefore, the proposed project would be consistent with Goal No. 1 of the Public Safety Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 2: Utilize safety considerations, as a means of encouraging and enhancing desired land use patterns.	**Consistent.** The proposed project includes provisions for safety, as well as design features to improve safety through new development. The proposed project focuses growth in transit corridors and other major areas of change. The LUE is implemented through the Zoning Code, including crime prevention through environmental design provisions applied during the City's Site Plan review process (refer to LUE Goals 2 and 3, as well as UDE Strategy 7 and Implementation Strategy 50). Therefore, the proposed project would be consistent with Goal No. 2 of the Public Safety Element.
Goal No. 3: provide an urban environment, which is safe from all types of hazards as possible	**Consistent.** The proposed project includes provisions for safety, as well as design features to improve safety through new development. The proposed project focuses growth in transit corridors and other major areas of change. The LUE is implemented through the Zoning Code, including crime prevention through environmental design provisions applied during the City's Site Plan review process (refer to LUE Goals 2 and 3, as well as UDE Strategy 7 and Implementation Strategy 50). Therefore, the proposed project would be consistent with Goal No. 3 of the Public Safety Element.
Goal No. 4: Continue to identify existing or proposed uses or activities that may pose safety hazards.	**Consistent.** The proposed project seeks to develop safe, attractive neighborhoods throughout the City. Safety is also addressed through implementation of the City's Violence Prevention Plan and associated programs (refer to LUE Goal 4, as well as UDE Strategy 7 and Policies 6-3 and 41-7). Additionally, upon completion of the CAAP and dependent on available resources, the City will update the Safety Element consistent with SB 379. Therefore, the proposed project would be consistent with Goal No. 4 of the Public Safety Element.
Goal No. 5: Use physical planning as a means of achieving greater degrees of protection from safety hazards.	**Consistent.** The proposed project includes provisions for safety, as well as design features to improve safety through new development (refer to LUE Goals 2 through 4, as well as UDE Strategy 7, Policies 6-3 and 41-7, and Implementation Strategy 50). The proposed project focuses growth in transit corridors and other major areas of change. The proposed project is implemented through the Zoning Code, including crime prevention through environmental design provisions applied during the City's Site Plan review process. Therefore, the proposed project would be consistent with Goal No. 5 of the Public Safety Element.
Goal No. 6: Encourage transportation systems, utilities, industries and similar uses to locate and operate in a manner consistent with public safety goals.	**Consistent.** The proposed project contemplates new jobs and housing as well as improved buffers to reduce land-use conflicts (refer to Refer to LUE Goals 2 through 7, as well as UDE Strategies 7, 14, ands 17; Policies 6-3, 23-1, 23-6, 24-3, 24-8, 24-9, 25-1, 38-4, and 41-7; and Implementation Strategy 50). The proposed project is implemented through the Zoning Code, including crime prevention through environmental design provisions applied during the City's Site Plan review process. Therefore, the proposed project would be consistent with Goal No. 6 of the Public Safety Element.
Goal No. 7: Assure continued safe accessibility to all urban land uses throughout the City.	**Consistent.** The transportation system is primarily addressed in the City's General Plan Mobility Element. However, there are supporting policies in the plan that promote complete streets and focus on land use and design features that promote walking, biking, and transit use. Safety is an important component in designing street improvements along with complementary land uses (refer to LUE Goals 2 through 7, as well as UDE Strategies 7, 14, ands 17; Policies 6-3, 23-1, 23-6, 24-3, 24-8, 24-9, 25-1, 38-4, and 41-7; and Implementation Strategy 50). Therefore, the proposed project would be consistent with Goal No. 7 of the Public Safety Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 8: Encourage development that would be most in harmony with nature and less vulnerable to natural disasters.	**Consistent.** Existing codes and regulations, including the zoning and building code provide for high levels of safety. In addition, the plan seeks to reconnect development with consideration of the natural environment. Provisions for new and redevelopment within the proposed project would encourage structures to be built and designed at higher levels of safety than exist in the current built environment (refer to LUE Goals 1 through 4 and Policy 16-2, as well as UDE Strategy 7 and Policy 6-3). Therefore, the proposed project would be consistent with Goal No. 8 of the Public Safety Element.
Goal No. 9: Encourage development that would augment efforts of other safety-related Departments of the City (i.e. design for adequate access for firefighting equipment and police surveillance).	**Consistent.** The proposed project includes provision for safety through the distribution of land uses and also the design of those future improvements. The proposed project is implemented through the Zoning Code, including review by police, fire, transit, and public works officials applied during the City's Site Plan Review process (refer to LUE Goal 7, as well as UDE Strategies, 1, 6, and 7). Therefore, the proposed project would be consistent with Goal No. 9 of the Public Safety Element.
Goal No. 10: Strive to encourage urbanization patterns, which preserve and/or create greater safety for residents or visitors.	**Consistent.** The proposed project includes goals and provisions for improved safety both in new development and through improvements to existing neighborhoods (refer to LUE Goal 4 and UDE Strategy 7). Therefore, the proposed project would be consistent with Goal No. 10 of the Public Safety Element.
Goal No. 11: Critically evaluate proposed public or private actions, which may pose safety hazards to residents or visitors.	**Consistent.** The proposed project includes provision for safety through the distribution of land uses and also the design of those future improvements (refer to LUE Goal 7, as well as UDE Strategies, 1, 6, and 7). The proposed project is implemented through the Zoning Code, including review by police, fire, transit, and public works officials applied during the City's Site Plan Review process. Therefore, the proposed project would be consistent with Goal No. 11 of the Public Safety Element.
Conservation Element (1973)	
Overview. The 1973 Conservation Element assures that natural resources, including mineral resources are considered in land use planning. This is consistent with the proposed project's goal to expand open space and plan in relation to the natural world (refer to LUE Goals 7-9; Policies 11-2, 18-4, 18-5, 19-1, 19-3, 19-4, 19-5, and 20-1 through 20-11; Implementation Strategies LU-M-28, 37, 55, 97, 98, 99, and 110, as well as UDE Strategies 5, 39, and 40; Policies UD 4-2, 6-4, 31-7, 31-8, and 34-2; and Implementation Strategies 51 and 53). Therefore, the proposed project would be consistent with the Conservation Element.	
Goal No. 1: To conserve the natural resources of Long Beach through wise management and well planned utilization of water, vegetation, wildlife, minerals, and other resources.	**Consistent.** The proposed project applies sustainability standards to protect and enhance water and other natural resources. The proposed project seeks to expand resource protection and integrate sustainability into all land use and design decisions (refer to LUE Goals 7-9; Policies 11-2, 18-4, 18-5, 19-1, 19-3, 19-4, 19-5, and 20-1 through 20-11; Implementation Strategies LU-M-28, 37, 55, 97, 98, 99, and 110, as well as UDE Strategies 5, 39, and 40; Policies UD 4-2, 6-4, 31-7, 31-8, and 34-2; and Implementation Strategies 51 and 53). Therefore, the proposed project would be consistent with Goal No. 1 of the Conservation Element.
Goal No. 2: To create and maintain a productive harmony between man and his environment through conservation of natural resources and protection of significant areas having environmental or aesthetic value.	**Consistent.** The proposed project seeks to create additional open space, through both large and small additions of park, plaza, and buffer space. The proposed project seeks to expand resource protection and integrates sustainability into all land use and design decisions (refer to LUE Goals 7 through 9, as well as UDE Strategies 17, 29, 30, and 33, and Policies 23-1, 24-7, 24-8, and 24-9). Therefore, the proposed project would be consistent with Goal No. 2 of the Conservation Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Goal No. 3: To revitalize and enhance areas where inadequate conservation measures occurred in the past.	**Consistent.** The proposed project places a particular emphasis on disadvantaged communities and ways to lessen land-use conflicts including through the reduction of environmental hazards (refer to LUE Goal 6 and UDE Strategy 13). Therefore, the proposed project would be consistent with Goal No. 3 of the Conservation Element.
Goal No. 4: To improve and preserve the unique and fine qualities of Long Beach and to eliminate undesirable or harmful elements.	**Consistent.** The proposed project includes a number of goals to improve the quality of life in Long Beach for residents, workers, and visitors (refer to all goals, policies, and strategies listed throughout the proposed LUE and UDE). Therefore, the proposed project would be consistent with Goal No. 4 of the Conservation Element.
Goal No. 5: To promote the health, safety and well-being of the people of Long Beach by adopting standards for the proper balance, relationship, and distribution of the various types of land uses, and by formulating and adopting a long-term capital improvement program.	**Consistent.** This goal has already been implemented by the City. PlaceTypes have been distributed around the City based on existing conditions, transportation corridors, and the jobs and housing projections set in the RTP/SCS (refer to Map 7 in the proposed LUE and Map 2 in the proposed UDE). The annual Capital Improvement Program is certified by the Planning Commission for conformity with the City's General Plan. Therefore, the proposed project would be consistent with Goal No. 5 of the Conservation Element.
Goal No. 6: To establish a balanced program aimed at improving the qualitative conditions of life for all segments of the population of the City.	**Consistent.** The proposed project includes a number of goals to improve the quality of life in Long Beach for residents, workers, and visitors. Refer to all goals, policies, and strategies listed throughout the proposed LUE and UDE. Therefore, the proposed project would be consistent with Goal No. 6 of the Conservation Element.
Water Resource Goal No. 1: To assure adequate quantity and quality of water to meet present and future domestic, agricultural and industrial needs of the City.	**Consistent.** This Recirculated Draft EIR includes a full analysis of water supply including conformity with the Urban Water Management Plan in Section 4.9, Utilities. The proposed project includes provisions aimed at the careful management of water and integrating water savings into project design (refer to LUE Goals 1 and 8, Strategies 10, 19, and 20, and Policy 18-4, as well as UDE Strategy 39, Policies 4-3, 5-1, 5-7, 6-4, 31-7, 31-8, and 34-2, and Implementation Strategy 69). Therefore, the proposed project would be consistent with Water Resource Goal No. 1 of the Conservation Element.
Water Resource Goal No. 2: To enforce existing ordinances and develop new ordinances and promote continuing research directed toward achieving the required stringent water quality standards which regulate waste water effluent discharge to ocean waters, bay and estuaries, fresh water and groundwater.	**Consistent.** Wastewater standards are established under the Clean Water Act and other federal, State, and regional regulations. The proposed project promotes proper infrastructure and promotes improved water quality through improved stormwater diversion and infiltration (refer to LUE Goal 7 and Strategy 6). Therefore, the proposed project would be consistent with Water Resource Goal No. 2 of the Conservation Element.
Water Resource Goal No. 3: To assure that the waters of San Pedro and Alamitos Bays and Colorado Lagoon are maintained at the highest quality feasible in order to enhance their recreational, and commercial utilization.	**Consistent.** The proposed project includes provisions and design policies to promote stormwater capture, treatment, and infiltration. Preventing stormwater from reaching the bays and lagoons is essential to maintaining the good water quality the City currently enjoys (refer to LUE Goal 7 and Strategy 6). Therefore, the proposed project would be consistent with Water Resource Goal No. 3 of the Conservation Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Water Resource Goal No. 4: To enforce existing controls and ordinances regulating waste discharge from vessels.	**Consistent.** The City of Long Beach Marine Bureau, the Long Beach Police Department, and the Health Department all assist State and federal agencies in enforcing water quality rules. Untreated effluent cannot be legally discharged from any vessel in the waters in and around Long Beach. In addition, LUE Goal 7 and Strategy 6 are aimed at improving water quality and natural resources in the City. Therefore, the proposed project would be consistent with Water Resource Goal No. 4 of the Conservation Element.
Water Resource Goal No. 5: To maintain, upgrade, and improve waste water systems and facilities serving Long Beach.	**Consistent.** This Recirculated Draft EIR includes an analysis of wastewater systems and capacities in Section 4.9, Utilities. Existing capacity is sufficient for the anticipated levels of growth. In addition, LUE Goal 7 and Strategy 6 are aimed at improving water quality and natural resources in the City. Therefore, the proposed project would be consistent with Water Resource Goal No. 5 of the Conservation Element.
Water Resource Goal No. 6: To develop a comprehensive citywide water supply and management program which utilizes water from all sources including groundwater.	**Consistent.** This goal is already implemented through the City's Urban Water Management Plan. This Recirculated Draft EIR includes a full analysis of water supply including conformity with the Urban Water Management Plan in Section 4.9, Utilities. The proposed project also includes provisions regarding the careful management of water and integrating water savings into project design (refer to LUE Goals 1 and 8, Strategies 10, 19, and 20, and Policy 18-4, as well as UDE Strategy 39, Policies 4-3, 5-1, 5-7, 6-4, 31-7, 31-8, and 34-2, and Implementation Strategy 69). Therefore, the proposed project would be consistent with Water Resource Goal No. 6 of the Conservation Element.
Water Resource Goal No. 7: To preserve and enhance the open space opportunities offered by the inland waterways of the City through improved access and beautification.	**Consistent.** The proposed project strives to protect, enhance, and promote the public use of all the City's parks and open space including its inland waterways (refer to LUE Major Area of Change 1, Goal 9, Policy 18-1, Strategies 19 and 20, and Implementation Strategies 84, 85, 86, 91, and 96, as well as UDE Strategies 17 and 29). Therefore, the proposed project would be consistent with Water Resource Goal No. 7 of the Conservation Element.
Soils Management Goal No. 1: To preserve and enhance lands of significant value such as beaches and bluffs.	**Consistent.** The City's General Plan, by definition, is general in nature and does not contain specific development plans for the sandy area of the beach. No specific changes to the recreational facilities on the beach are contemplated in the proposed project. The proposed project does, however, seek to promote use of the enhancement and use of coastal resources by residents and visitors alike (refer to LUE Goals 1, 3, and 9; and Maps 7 and 9, as well as UDE Maps 2 and 12). Therefore, the proposed project would be consistent with Soils Management Goal No. 1 of the Conservation Element.
Soils Management Goal No. 2: To critically evaluate any proposed public improvements on the beach and any project that would contribute to the erosion of the beaches.	**Consistent.** The City's General Plan is by definition general in nature and does not contain specific development plans for the sandy area of the beach. No specific changes to the recreational facilities on the beach are contemplated in the proposed project that would exacerbate beach erosion. The proposed project does, however, seek to promote use of the enhancement and use of coastal resources by residents and visitors alike. Specific impacts of any future projects would be evaluated through the City's Site Plan Review process, including potential impacts with respect to beach erosion. Refer to LUE Goals 1, 3, and 9; and Maps 7 and 9, as well as UDE Maps 2 and 12. Therefore, the proposed project would be consistent with Soils Management Goal No. 2 of the Conservation Element.
Soils Management Goal No. 3: To minimize those activities which would have a critical or	**Consistent.** This goal has already been implemented and is reflected in existing programs and regulations. Future projects facilitated by the

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
detrimental effect on geologically unstable areas and soils subject to erosion.	proposed project would be implemented through the City's Zoning Code (Title 21) and Building Code. These codes include provisions for soil stability and geologic safety. The proposed project allows modest increases in height and intensity, which would encourage the redevelopment of existing structures, resulting in new structures built at higher levels of safety (refer to LUE Goals 1–4, and 7, as well as UDE Policy 6-3). Specific impacts of any future projects would be evaluated through the City's Site Plan Review process. Therefore, the proposed project would be consistent with Soils Management Goal No. 3 of the Conservation Element.
Soils Management Goal No. 4: To preserve the beach from Alamitos Boulevard to the Long Beach Marina as a unique geologic zone and to perpetuate its public use as an open entity.	**Consistent.** The City's General Plan is by definition general in nature and does not contain specific development plans for the sandy area of the beach. No specific changes to the recreational facilities on the beach are contemplated in the proposed project. The proposed project would promote the enhancement and use of coastal resources by residents and visitors alike (refer to LUE Goals 1, 3, and 9; and Maps 7 and 9, as well as UDE Maps 2 and 12). Specific impacts of any future projects would be evaluated through the City's Site Plan Review process. The public use of the beach is guaranteed under park abandonment laws, the California Coastal Act, the adopted LCP, tidelands restrictions and other laws. Therefore, the proposed project would be consistent with Soils Management Goal No. 4 of the Conservation Element.
Soils Management Goal No. 5: To continue to monitor areas subject to siltation and deposition of soils which could have a detrimental effect upon water quality and the marine biosphere.	**Consistent.** The proposed project applies sustainability standards to protect and enhance water and other natural resources. The proposed project seeks to expand resource protection and integrate sustainability into all land use and design decisions (refer to LUE Goals 7-9; Strategy 20; Policies 11-2, 18-4, 19-3, 19-4, 19-5, and 20-5; and Implementation Strategies 99, 100, 101, as well as UDE Policies 17-3, 17-4, 21-8, and 39-7, and Implementation Strategy 70). Specific impacts of any future projects, including sediment deposition, would be evaluated through the City's Site Plan Review process. Therefore, the proposed project would be consistent with Soils Management Goal No. 5 of the Conservation Element.
Vegetation Goal No. 1: To provide protective controls for lands supporting distinctive native vegetation, wildlife species which can be used for ecologic, scientific and educational purposes.	**Consistent.** The proposed project designates specific open space areas and focuses on acquisition of open space for multiple uses, including as buffer and habitat or natural areas (refer to LUE Goal 9, Policy 18-1, Strategies 18 through 20, and Implementation Strategies 84, 85, 86, and 88, as well as UDE Strategies 17 and 29). Therefore, the proposed project would be consistent with Vegetation Goal No. 1 of the Conservation Element.
Vegetation Goal No. 2: To perpetuate the ecological preserve in El Dorado Park.	**Consistent.** The proposed project continues the operation of El Dorado Park as a nature preserve (refer to LUE Implementation Strategy 108 and UDE Map 12). Therefore, the proposed project would be consistent with Vegetation Goal No. 2 of the Conservation Element.
Vegetation Goal No. 3: To locate, define, and protect other beneficial habitats in and about the City.	**Consistent.** The proposed project focuses on acquisition of open space for multiple uses, including as buffer and habitat or natural areas. Acquisition and restoration of the Los Cerritos wetlands, in cooperation with the Los Cerritos Wetland Authority, is a major focus of that effort. Refer to LUE Goals 1 and 2, as well as UDE Strategy 29. Therefore, the proposed project would be consistent with Vegetation Goal No. 3 of the Conservation Element.

Table C: General Plan Consistency Analysis

General Plan Policy or Goal	Project Consistency
Wildlife Goal No. 1: to promote measures and plans which protect and preserve distinctive types of wildlife including mammals, birds, marine organisms and especially endangered species.	**Consistent.** The proposed project focuses on acquisition of open space for multiple uses, including as buffer and habitat or natural areas that could be utilized for varying types of wildlife (refer to LUE Goals 1 and 2, as well as UDE Strategy 29). Therefore, the proposed project would be consistent with Wildlife Goal No. 1 of the Conservation Element.
Mineral Resource Goal No. 1: To manage the petroleum resources of the City in a manner that not only maximize their economic value, but would enhance the quality of open space.	**Consistent.** Oil drilling is conducted according to the City's Oil Map. City proceeds from those activities benefit tidelands and uplands activities, including the acquisition and improvement of open space (refer to LUE Goals 1 and 2, as well as UDE Strategy 29). Therefore, the proposed project would be consistent with Mineral Resource Goal No. 1 of the Conservation Element.
Mineral Resource Goal No. 2: To continue good management practices in the production of petroleum including aesthetics, ecological compatibility and other environmental aspects.	**Consistent.** The proposed project encourages gradual consolidation of oil drilling activities in order to lessen the aesthetic and environmental impacts. Refer to LUE Policies 7-3, 11-2, and 20-6, as well as UDE Policy 28-12. Therefore, the proposed project would be consistent with Mineral Resource Goal No. 2 of the Conservation Element.
Mineral Resource Goal No. 3: To continue to take restorative measures to remedy and prevent subsidence associated with oil extraction.	**Consistent.** This goal has been implemented through local and State regulations. The proposed project encourages the consolidation and thus modernization of oil drilling equipment, which would result in higher levels of geologic safety, further preventing subsidence (refer to LUE Policies 7-3, 11-2, and 20-6, as well as UDE Policy 28-12). Therefore, the proposed project would be consistent with Mineral Resource Goal No. 3 of the Conservation Element.
Other Resources Goal No. 1: To identify and preserve sites of outstanding scenic, historic, and cultural significance or recreational potential.	**Consistent.** The proposed project is consistent with the Scenic Routes contained within the Mobility Element. Additionally, the proposed project continues the City's Historic Preservation program and includes a map of designated City parks and open space (refer to LUE Maps 7 and 9, as well as UDE Maps 1, 2, and 12). Therefore, the proposed project would be consistent with Other Resources Goal No. 1 of the Conservation Element.
Other Resources Goal No. 2: To encourage citizen participation in the identification and preservation of historic and cultural sites.	**Consistent.** The proposed project is consistent with the Scenic Routes contained within the Mobility Element. Additionally, the plan continues the City's Historic Preservation program and includes a map of designated City parks and open space (refer to LUE Maps 7 and 9, as well as UDE Maps 1, 2, and 12). Therefore, the proposed project would be consistent with Other Resources Goal No. 2 of the Conservation Element.

Source: City of Long Beach General Plan, as amended.

This page intentionally left blank

APPENDIX D:

NOISE IMPACT ANALYSIS

This page intentionally left blank

DRAFT

NOISE AND VIBRATION IMPACT ANALYSIS

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS PROJECT

CITY OF LONG BEACH, CALIFORNIA

LSA

June 2019

This page intentionally left blank

DRAFT

NOISE AND VIBRATION IMPACT ANALYSIS

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS PROJECT

CITY OF LONG BEACH, CALIFORNIA

Submitted to:

City of Long Beach
Development Services/Planning Bureau
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

LSA
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

Project No. CLB1804

June 2019

This page intentionally left blank

EXECUTIVE SUMMARY

This Noise and Vibration Impact Analysis has been prepared to evaluate the impacts that may result from implementation of the proposed General Plan Land Use Element and Urban Design Element (LUE/UDE) Project in the City of Long Beach (City).

This Noise and Vibration Impact Analysis describes existing noise and vibration conditions, discusses the characteristics of sound, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the potential noise and vibration impacts resulting from the implementation of the LUE/UDE. Noise monitoring was conducted in order to assess the ambient noise environment within the City. Traffic data obtained from the *City of Long Beach General Plan Land Use and Urban Design Elements Traffic Impact Analysis* (LSA, 2019) was used to calculate anticipated increase in overall daily traffic on major roadway segments in the City in order to provide a quantitative assessment of the potential increase in noise associated with the LUE/UDE.

Construction of future projects associated with implementation of the LUE/UDE could result in the generation of ground-borne vibration. Any future construction activities associated with implementation of the LUE/UDE would be required to comply with the Noise Ordinance requirements in effect at the time of project construction. Therefore, impacts from typical construction methods would not result in the exposure of sensitive receptors to excessive ground-borne vibration or noise levels.

Construction associated with implementation of the LUE/UDE would occur over a period of approximately 21 years. Construction activities associated with development allowed under the LUE/UDE could result in substantial temporary or periodic increases in ambient noise levels at development sites throughout the City. Noise-sensitive receptors include residences, schools, hospitals, churches, and similar uses that are sensitive to noise. Construction and operation of development allowed under the LUE/UDE could adversely affect nearby noise-sensitive land uses. Construction noise is permitted by the Municipal Code when activities occur between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and federal holidays and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction would be permitted on Sundays. Construction activities associated with development allowed under the LUE/UDE would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced to a less than significant level. While construction noise impacts are currently exempt from specific noise level limits, projects that have unusual or extremely loud construction activities would be evaluated on a case-by-case basis.

A permanent increase in ambient noise would include noise increases associated with increased traffic on roadways in the City. It is projected that traffic volumes on some streets within the City would increase due to the growth envisioned in the LUE/UDE. This increase in traffic volumes would result in increased traffic noise levels compared to existing conditions; however, the future traffic noise levels calculated were less than 1.0 dBA and therefore would be less than perceptible.

Long Beach Airport is located centrally within the City, approximately 3 miles northeast of downtown. Implementation of the LUE/UDE would locate business parks and airport-related land

uses surrounding the airport and would not introduce any new noise-sensitive receptors within the 65 dBA noise contour. Therefore, the LUE/UDE would not result in the exposure of sensitive receptors to excessive noise levels from aircraft noise sources.

The proposed project would not create a cumulatively considerable contribution to regional noise conditions. Additionally, implementation of the LUE/UDE policies and land use strategies would require the City to consider noise and land use compatibility issues when evaluating individual development proposals. Therefore, under cumulative conditions, implementation of the proposed General Plan LUE/UDE would result in a less than significant noise impact.

TABLE OF CONTENTS

EXECUTIVE SUMMARY i
TABLE OF CONTENTS iii
FIGURES AND TABLES v
LIST OF ABBREVIATIONS AND ACRONYMS vi
INTRODUCTION 1
PROJECT DESCRIPTION 1
Land Use Element 5
Urban Design Element 9
General Plan Build Out 9
BACKGROUND 10
Characteristics of Sound 10
Measurement of Sound 11
Physiological Effects of Noise 12
Characteristics of Ground-borne Vibration 13
Regulatory Framework 14
United States Environmental Protection Agency 14
Federal Vibration Impact Standards 16
State of California 16
City of Long Beach General Plan 17
Goals, Plans, and Policies 19
City of Long Beach Municipal Code 19
SETTING 20
Existing Sensitive Land Uses 21
Overview of the Existing Noise Environment 21
Ambient Noise Levels 21
Existing Roadway Noise Levels 21
Existing Rail Noise Levels 28
Existing Stationary Source Noise Levels 28
Existing Port of Long Beach Noise Levels 28
Existing Airport Noise Levels 29
Existing Vibration Sources 29
Vibration Sources 29
Construction Activity Vibration 29
Rail Activity Related Vibration 30
Heavy Vehicles and Buses 30
Other Sources of Vibration Annoyance 30
PROJECT IMPACTS 31
Noise Exposure 31
Urban Design Element Policies 32
Land Use Element Policies 33
Generation of Excessive Ground-borne Vibration 34

Substantial Permanent Increase in Ambient Noise Levels 35
Stationary-Source Noise 35
Traffic Noise 36
Substantial Temporary Increase in Ambient Noise Levels 47
Airport Noise 49
Cumulative Impacts 49
Noise Mitigation Measures 50
Level of Significance After Mitigation 51
REFERENCES 52

APPENDIX

A: NOISE MONITORING DATA

FIGURES AND TABLES

FIGURES

Figure 1: Project Location 3
Figure 2: Project PlaceTypes 7
Figure 3: Existing Major Noise Sources 23
Figure 4: Noise Monitoring Locations 25
Figure 5: Future Traffic Noise Contours (2040) Overview 45

TABLES

Table A: Definitions of Acoustical Terms 12
Table B: Common Sound Levels and Their Noise Sources 13
Table C: Typical Vibration Source Levels for Construction Equipment 14
Table D: Summary of USEPA Noise Levels 15
Table E: Summary of Human Effects in Areas Exposed to 55 dBA CNEL 15
Table F: Ground-Borne Vibration and Noise Impact Criteria 16
Table G: Community Noise Exposure L_{dn} or CNEL (dB) 18
Table H: Recommended Criteria for Maximum Acceptable Noise Levels[1] in A-Weighted Decibels (dBA) 19
Table I: Maximum Exterior Local Noise Criteria 20
Table J: Interior Noise Limits 20
Table K: Existing Ambient Noise Monitoring Results (dBA) 27
Table L: Meteorological Conditions During Ambient Noise Monitoring 27
Table M: Traffic Noise Levels Assessment for the Proposed Project 37
Table N: Noise Emission Reference Levels and Usage Factors 48

LIST OF ABBREVIATIONS AND ACRONYMS

ADT	average daily traffic
Blue line	County Metro Rail Blue line
BNSF	Burlington Northern Santa Fe
City	City of Long Beach
CNEL	Community Noise Equivalent Level
County	Los Angeles County
dB	decibels
dBA	A-weighted decibels
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
HVAC	heating, ventilation, and air conditioning
Hz	frequency
I	Interstate
inch/sec	inch(es) per second
L_{01}, L_{10}, L_{50}, L_{90}	A-weighted noise levels for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
L_{dn}	day-night average level
L_{eq}	equivalent continuous sound level
L_{max}	maximum noise level
L_{min}	minimum noise level
LUE	Land Use Element
Metro	Los Angeles County Metropolitan Transportation Authority

mph	miles per hour
MPO	Metropolitan Planning Organization
OITC	Outdoor/Indoor Transmission Class
OSHA	Occupational Safety and Health Administration
PCH	Pacific Coast Highway
PHL	Pacific Harbor Line Incorporated
planning area	City of Long Beach
re	relative
RHNA	Regional Housing Needs Assessment
RMS	root mean square
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SCS	Sustainable Communities Strategy
SEASP	Southeast Area Specific Plan
SRE	Scenic Routes Element
STC	Sound Transmission Class
TOD	Transit-Oriented Development
UDE	Urban Design Element
UPRR	Union Pacific Railroad
USEPA	United States Environmental Protection Agency
VdB	vibration velocity decibels

This page intentionally left blank

NOISE AND VIBRATION IMPACT ANALYSIS

INTRODUCTION

This Noise and Vibration Impact Analysis has been prepared to evaluate the impacts that may result from implementation of the proposed General Plan Land Use Element and Urban Design Elements (LUE/UDE) Project in the City of Long Beach (City). The project location map is included in Figure 1.

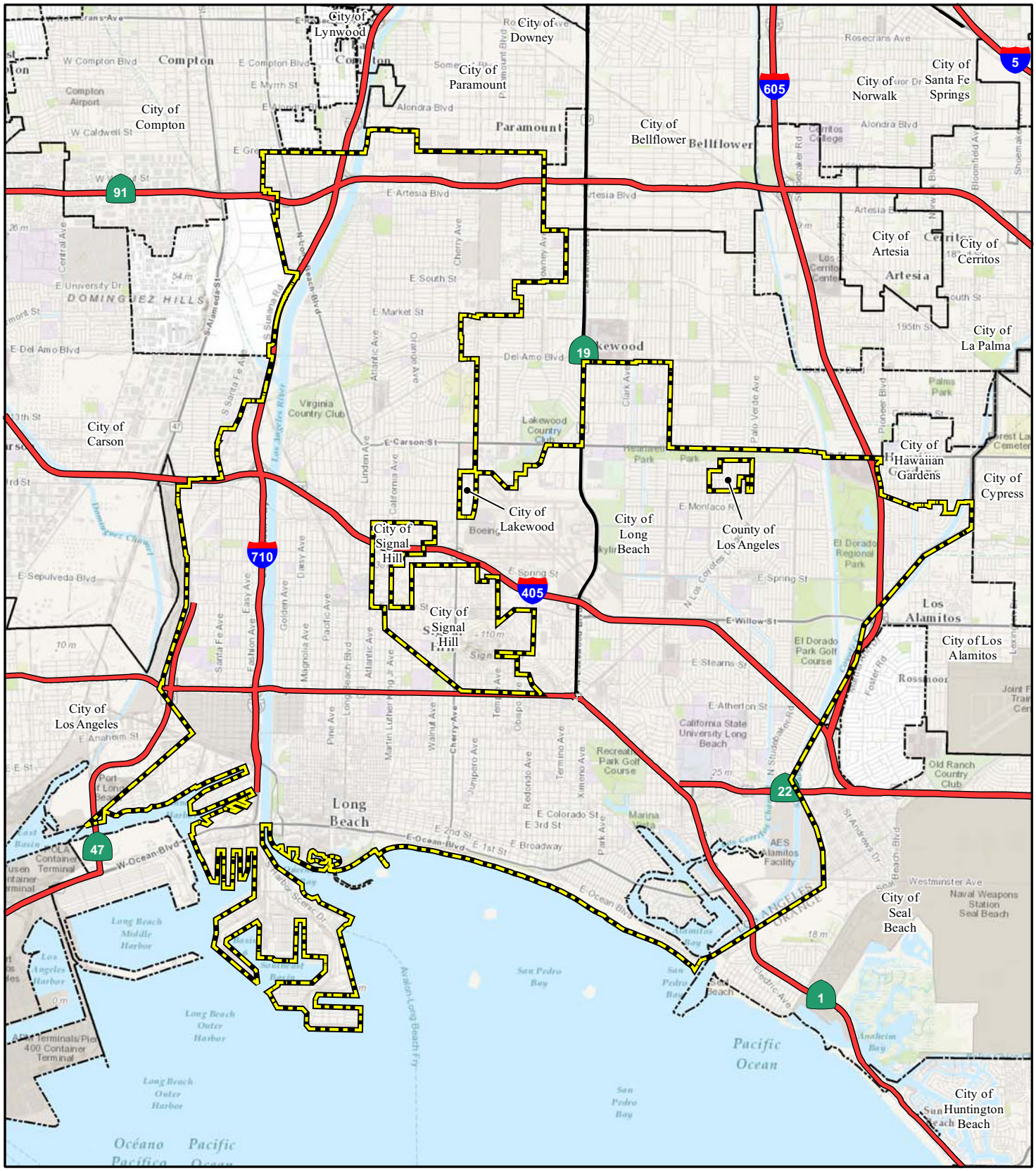
This Noise and Vibration Impact Analysis describes existing noise and vibration conditions, discusses the characteristics of sound, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the potential noise and vibration impacts resulting from the implementation of the proposed project. Noise monitoring was conducted using the Larson Davis SoundTrack LxT sound level meter at 11 locations in order to assess the ambient noise environment within the City. The *City of Long Beach General Plan Land Use and Urban Design Elements Traffic Impact Analysis* (LSA, 2019) prepared for the proposed project provides total traffic volume by City section. LSA used the projected increase in overall daily traffic on major roadway segments in the City to provide a quantitative assessment of the potential increase in noise associated with the proposed project.

PROJECT DESCRIPTION

As illustrated by Figure 1, Project Location, the City (also referred to as the "planning area") includes the entire 50 square miles within the limits of the City of Long Beach (excluding the City of Signal Hill, which is completely surrounded by the City of Long Beach) in Los Angeles County (County), California. The City is bordered on the west by the Cities of Carson and Los Angeles (including the neighborhood of Wilmington and the Port of Los Angeles); on the north by the Cities of Compton, Paramount, and Bellflower; and on the east by the Cities of Lakewood, Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach, and the unincorporated community of Rossmoor. The Pacific Ocean borders the southern portion of the City, and as such, portions of the City are located within the California Coastal Zone.

The proposed project is an update to the City's existing General Plan and is intended to guide growth and future development through the year 2040. While the existing General Plan does not currently include an Urban Design Element (UDE), the existing Scenic Routes Element (SRE) (1975) designates roadways within the City for which view protection should be considered and also establishes varying design standards to ensure the continued maintenance of the aesthetic character of these roadways. The proposed project includes the approval of both the General Plan LUE and UDE, which would replace the existing LUE and SRE. The following discussion summarizes the key components of each of the proposed General Plan Elements.

This page intentionally left blank



LSA

LEGEND

Project Area (City of Long Beach)

N

0 1 2
MILES

SOURCE: Bing Maps (c. 2008); ESRI (2008)

I:\CLB1804\G\Chapter 3\Project_Loc.cdr (10/12/2018)

FIGURE 1

Long Beach General Plan
Land Use and Urban Design Elements

Project Location

This page intentionally left blank

Land Use Element

The proposed updated LUE would divide the City into nine distinct Community Plan Areas, comprised of the following: (1) North Long Beach; (2) Bixby Knolls; (3) Westside and Wrigley; (4) Eastside; (5) Central; (6) Traffic Circle; (7) Downtown; (8) Midshore; and (9) Southeast. While there are over 70 neighborhoods identified by residents of the City, the community plan areas are defined by strong physical boundaries such as freeways, rivers, City boundaries, and railroad tracks. For each Community Plan Area, the proposed LUE provides a description of its geographic context, outlines issues and needs unique to the area, and establishes neighborhood-specific land use strategies.

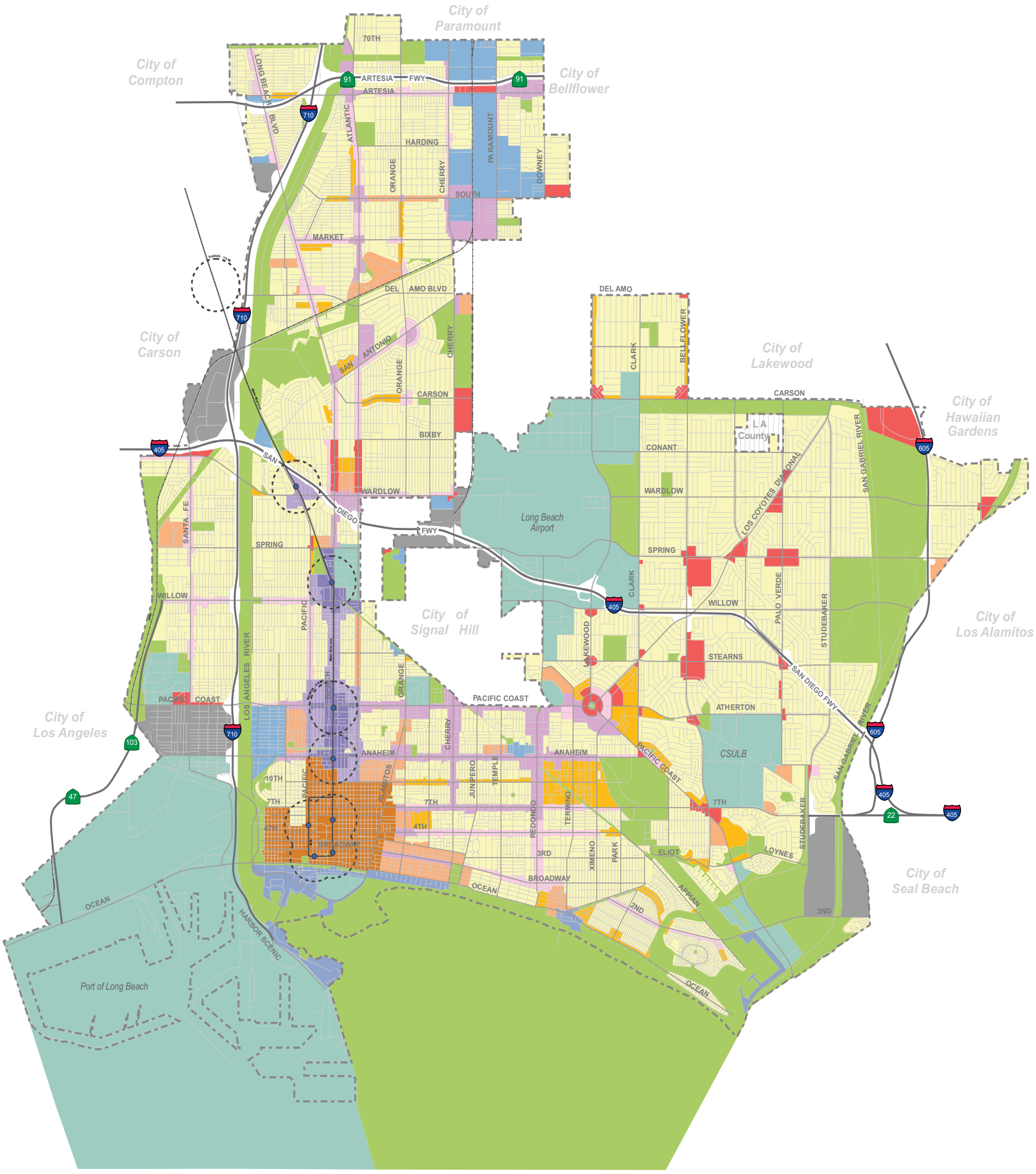
In addition to establishing Community Plan Areas, the proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach in the existing LUE of segregating property within the City through traditional land use designations and zoning classifications. The updated LUE would establish 14 primary PlaceTypes that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land uses within these areas. Each PlaceType would be defined by unique land use, form, and character-defining goals, policies, and implementation strategies tailored specifically to the particular application of that PlaceType within the City. The PlaceTypes are shown in Figure 2.

The new LUE would reflect the current needs and opportunities within the City, update land uses and bring the General Plan into conformity with the City's adopted General Plan Mobility Element (October 2013). The project would also provide for future development opportunities that would alleviate overcrowding documented in the City's Assessment of Fair Housing, and would accommodate projected growth and housing needs established in the City's General Plan 2013–2021 Housing Element and the 2016–2040 SCAG RTP/SCS.

The proposed LUE would allow for the opportunity for major changes to approximately 13 percent of the City. These areas are referred to as "Major Areas of Change" throughout the LUE and signify areas where growth is anticipated to be most profound. However, areas that are not designated as "Major Areas of Change" and/or are not anticipated to result in changes in existing land use patterns may also experience demographic growth.

In establishing PlaceTypes and focusing new development within the Major Areas of Change, the proposed LUE takes into account existing land use patterns in the City, adopted land use plans, and the demand for new land uses and increased densities to alleviate overcrowding of existing residences and accommodate the projected population growth. The proposed LUE also considers the location of undeveloped or underutilized parcels that are best suited for future development and accounts for which types of land uses and infrastructure would be required to serve new development facilitated by the new PlaceType categories. While the proposed LUE would provide for new development opportunities, it would not cause development to occur. Rather, the proposed LUE recognizes that ultimately growth and development depend on the initiative of individual developers and property owners. The LUE strategically accommodates projected growth along key corridors and near transit.

This page intentionally left blank



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD -L - Transit-Oriented Development - Low
- TOD -M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

LSA

N

0 .5 1
MILE

SOURCE: Proposed Long Beach General Plan Land Use Element, March 2018

FIGURE 2

Long Beach General Plan
Land Use and Urban Design Elements

Project PlaceTypes

I:\CLB1804\G\Chapter 3\Project Placetypes.cdr (1/30/2019)

This page intentionally left blank

Urban Design Element

Unlike the proposed LUE, the proposed UDE would be an entirely new element of the City's General Plan and would replace the existing SRE upon approval by the City Council. The decision to include a UDE in the City's General Plan grew from the City's stated need to provide an urban framework that addresses the varying aesthetic characteristics associated with the historic districts, traditional neighborhoods, auto-oriented commercial centers, urbanized centers, and corridors located throughout the City. As the City continues to evolve, the UDE seeks to shape the urban environment by preserving the character of existing neighborhoods that define the City's unique physical and aesthetic character while allowing for the continued evolution and improvement of the City in areas targeted for new development.

The UDE would define the physical aspects of the urban environment. Specifically, the UDE aims to further enhance the City's PlaceTypes established in the LUE by creating great places; improving the urban fabric, and public spaces; and defining edges, thoroughfares, and corridors. It is the City's intention that creating great places would provide gathering spaces for community members to meet and provide a space for spontaneous activities to occur. By improving the urban fabric, the City would allow for new development that would complement the existing historical development while serving as a unique and distinctive feature of the City.

Similar to the concept of creating great places, the City aims to provide public spaces to allow for community engagement opportunities. The creation of edges, thoroughfares, and corridors would define the larger commercial and business centers of the City while also integrating pedestrian amenities that would provide transitions into adjacent PlaceTypes. Examples of such pedestrian amenities include the creation of "public rooms" where pedestrians can dine and gather along street frontages adjacent to ground-floor cafes and retail uses.

In addition to creating great places, urban fabrics, and public spaces, and defining edges, thoroughfares, and corridors, the City intends to utilize the UDE to foster healthy, sustainable neighborhoods; promote compact and connected development; minimize and fill in gaps in the urban fabric of existing neighborhoods; improve the cohesion between buildings, roadways, public spaces, and people; and improve the economic vitality of the City.

General Plan Build Out

The proposed project would direct the long-term physical development in the City by guiding use, form, and characteristics of land improvements through the year 2040. In order to plan for future growth in the City through the year 2040, the proposed LUE accommodates demographic projections provided to the City by State and regional agencies. For the City and much of the Southern California region, the Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization (MPO) that prepares demographic projections. SCAG projects population and employment growth as part of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) process. For the 2016 RTP/SCS, SCAG forecasts population growth of 18,200 new residents and employment growth of 28,500 new jobs in the City by 2040.

The proposed LUE also incorporates housing projections provided by the Department of Housing and Community Development. Unlike other data projections, rather than being simply informative,

the housing allocation provided to jurisdictions through the Regional Housing Needs Assessment (RHNA) process is enforceable through the Housing Accountability Act. As an outcome of the most recent RHNA process, the City is required to plan for 7,048 new dwelling units by the year 2021. Further, due to insufficient construction of new housing units within Long Beach and the region in the past, the City has many residential areas where existing housing units are overcrowded. In order to identify the number of new housing units required to alleviate overcrowding, the City engaged in an Assessment of Fair Housing with the United States Department of Housing and Urban Development (2016). As an outcome of this assessment, it was determined that the City has anticipated housing needs for 21,476 housing units to address existing housing needs due to overcrowding. In total, 28,524 housing units are required to address future (7,048) and existing (21,476) housing needs. It is this number of units, which complies with both the State and federal assessments, which must be accommodated in City planning documents, including the proposed LUE. Of the 28,524 new units, a total of 13,403 new housing units are already accommodated in recently approved specific plans (e.g., Downtown Plan, Midtown Specific Plan, and Southeast Area Specific Plan).[1] Therefore, the City would be required to facilitate the development of 15,121 new housing units outside of these specific plan areas.

As a result of the processes described above, anticipated build out of the proposed project includes the following quantities of demographic data growth:

- Population: 18,230 new residents, for a total of 484,485 by 2040
- Housing: 28,524 new dwelling units, for a total of 192,318 by 2040
- Employment: 28,511 new jobs anticipated, for a total of 181,665 by 2040

BACKGROUND

This section provides background information on the evaluation of noise impacts including the characteristics of sound, the measurement of sound, the physiological effects of noise, and the regulatory framework for this analysis.

Characteristics of Sound

Noise is usually defined as unwanted sound and consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally related to annoyance, while loudness can affect our ability to hear through hearing damage. Pitch is the number of complete vibrations, or cycles per second, of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves, combined with the reception characteristics of the human ear. Sound pressure refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be measured precisely with instruments. The project analysis

[1] In total, 39.3 percent of the anticipated future housing growth would occur within these Specific Plan areas (i.e., 17.5 percent in the Downtown area, 12.7 percent in the Transit-Oriented Development areas of the Midtown Specific Plan, and 9.1 percent in the Southeast Area Specific Plan).

defines the noise environment of the project area in terms of sound pressure and the project's effect on sensitive land uses.

Measurement of Sound

Sound pressure is measured through the A-weighted scale to correct for the relative frequency response of the human ear. Unlike linear units (e.g., inches or pounds), decibels are measured on a logarithmic scale representing points on a sharply rising curve. For example, 10 decibels (dB) are 10 times more intense than 1 dB; 20 dB are 100 times more intense than 1 dB; and 30 dB are 1,000 times more intense than 1 dB. Thirty decibels (30 dB) represent 1,000 times as much acoustic energy as 1 dB. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dBA for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dBA for each doubling of distance over hard surfaces, and the sound decreases 4.5 dBA for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to measure noise for various time periods; an appropriate ambient noise metric affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant metrics for communities in the State of California are the L_{eq} and the Community Noise Equivalent Level (CNEL) or the day-night average level (L_{dn}) based on dBA. The CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as evening hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). The L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening hours. The CNEL and the L_{dn} are normally within 1 dBA of each other and are considered interchangeable.

Other noise level metrics that are important when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half of the time, the noise level exceeds this median noise level, and half of the time, it is less than this median noise level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during

a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to changes of 3 dBA or greater since this level has been found to be the lowest audible change perceptible to humans in outdoor environments. The second category, potentially audible, refers to changes in the noise level between 1 and 3 dBA, which are only noticeable in laboratory environments. The last category includes changes in noise levels of less than 1 dBA, which are inaudible to the human ear.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure (typically more than 8 hours, as defined by the Occupational Safety and Health Administration [OSHA]) to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions (thereby, affecting blood pressure and functions of the heart and the nervous system). In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness or loss of equilibrium.

For further detail, Table A, below, lists "Definitions of Acoustical Terms," and Table B displays "Common Sound Levels and Their Noise Sources."

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.

Table A: Definitions of Acoustical Terms

Term	Definitions
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Harris, Cyril. *Handbook of Acoustical Measurements and Noise Control* (1998).

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environment	Subjective Evaluation
Near jet engine	140	Deafening	128 times as loud
Civil defense siren	130	Threshold of Pain	64 times as loud
Hard rock band	120	Threshold of Feeling	32 times as loud
Accelerating motorcycle (a few feet away)	110	Very Loud	16 times as loud
Pile driver; noisy urban street/heavy city traffic	100	Very Loud	8 times as loud
Ambulance siren; food blender	95	Very Loud	
Garbage disposal	90	Very Loud	4 times as loud
Freight cars; living room music	85	Loud	
Pneumatic drill; vacuum cleaner	80	Loud	2 times as loud
Busy restaurant	75	Moderately Loud	
Near freeway auto traffic	70	Moderately Loud	Reference Level
Average office	60	Quiet	½ as loud
Suburban street	55	Quiet	
Light traffic; soft radio music (in apartment)	50	Quiet	¼ as loud
Large transformer	45	Quiet	
Average residence without stereo playing	40	Faint	⅛ as loud
Soft whisper	30	Faint	
Rustling leaves	20	Very Faint	
Human breathing	10	Very Faint	Threshold of Hearing

Source: Compiled by LSA (2016).

Characteristics of Ground-borne Vibration

Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may be perceptible from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. When assessing annoyance from ground-borne noise, vibration is typically expressed as root mean square (RMS) velocity in units of decibels of 1 micro-

inch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibrations are almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving, and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in Table C. Although the table gives one level for each piece of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data provide a reasonable estimate for a wide range of soil conditions. In extreme cases, excessive ground-borne vibration has the potential to cause structural damage to buildings. For buildings considered of particular historical significance or that are particularly fragile structures, the damage threshold is approximately 96 VdB; the damage threshold for other structures is 100 VdB.[2]

Table C: Typical Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (inch/sec)	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment Manual* (September 2018).
inch/sec = inch(es) per second
VdB = vibration velocity decibels

Regulatory Framework

The following section summarizes the regulatory framework related to noise, including federal, State and City of Long Beach plans, policies, and standards.

United States Environmental Protection Agency

In 1972, Congress enacted the Noise Control Act. This act authorized the United States Environmental Protection Agency (USEPA) to publish descriptive data on the effects of noise and

[2] Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control.*

establish levels of sound *requisite to protect the public welfare with an adequate margin of safety.* These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in Table D. The USEPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

Table D: Summary of USEPA Noise Levels

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: U.S. Environmental Protection Agency (USEPA). *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (March 1974).
dB = decibels
L_{eq} = equivalent continuous sound level

For protection against hearing loss, 96 percent of the population would be protected if sound levels were less than or equal to an $L_{eq}(24)$ of 70 dBA. The "(24)" signifies an L_{eq} duration of 24 hours. The USEPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet (ft) in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in Table E. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 ft, with no community reaction. However, 1 percent of the population may complain about noise at this level, and 17 percent may indicate annoyance.

Table E: Summary of Human Effects in Areas Exposed to 55 dBA CNEL

Type of Effect	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 0.35 meter. 99 percent sentence intelligibility (average) at 1.0 meter. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

Source: U.S. Environmental Protection Agency (USEPA). *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (March 1974).
CNEL = Community Noise Equivalent Level
dB = decibels
dBA = A-weighted decibels

Federal Vibration Impact Standards

Vibration impact criteria included in the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (September 2018) are used in this analysis for ground-borne vibration impacts on human annoyance, as shown in Table F. The criteria presented in Table F account for variation in project types as well as the frequency of events, which differ widely among projects. It is intuitive that when there will be fewer events per day, it should take higher vibration levels to evoke the same community response. This is accounted for in the criteria by distinguishing between projects with frequent and infrequent events, in which the term "frequent events" is defined as more than 70 events per day. The vibration impact levels indicated in Table F are used as thresholds to determine acceptable levels for development adjacent to vibration sources. The criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event.

Table F: Ground-Borne Vibration and Noise Impact Criteria

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 micro-inch/sec)		Ground-Borne Noise Impact Levels (dB re 20 micro-Pascals)	
	Frequent [1] Events	Infrequent [2] Events	Frequent [1] Events	Infrequent [2] Events
Category 1: Buildings in which low ambient vibration is essential for interior operations (i.e., vibration-sensitive manufacturing, hospitals with vibration sensitive equipment, and university research operation).	65 VdB[3]	65 VdB[3]	--[4]	--[4]
Category 2: Residences and buildings in which people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime uses.	75 VdB	83 VdB	40 dBA	48 dBA

Source: Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment Manual* (September 2018).

[1] Frequent events are defined as more than 70 events per day.

[2] Infrequent events are defined as fewer than 70 events per day.

[3] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

[4] Vibration-sensitive equipment is not sensitive to ground-borne noise.

dB = decibels
dBA = A-weighted decibels
HVAC = heating, ventilation, and air conditioning
inch/sec = inch(es) per second
re = relative
VdB = vibration velocity decibels

State of California

The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the *State Noise Insulation Standard*, it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix

Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

In addition, Chapter 5, Section 5.507 of the California Green Building Standards Code includes nonresidential mandatory measures, which require that buildings exposed to a noise level of 65 dB L_{eq}-1-hour during any hour of operation shall have building, addition, or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite Sound Transmission Class (STC) rating of at least 45 (or Outdoor/Indoor Transmission Class [OITC] 35) with exterior windows of a minimum STC of 40 (or OITC 30).

The State has established land use compatibility guidelines for determining acceptable noise levels for specified land uses in the State of California General Plan Guidelines as shown in Table G.[3]

City of Long Beach General Plan

The adopted City of Long Beach General Plan addresses noise in the Noise Element, which was adopted in 1975 and is currently in the process of being updated.[4] The Noise Element contains goals and policies for noise control and abatement in the City. The goals and policies contained in the Noise Element address noise in relation to land use planning, the noise environment, transportation noise, construction and industrial noise, population and housing noise, and public health and safety. General noise goals for Long Beach aim to attain a healthier and quieter environment for all its citizens while maintaining a reasonable level of economic progress and development.

The Noise Element considers the impacts of stationary noise producers. Stationary noise producers are entities with a fixed location that emit noise. The General Plan requires that sensitive land uses not be subjected to excessive stationary noise, either by implementing mitigation at the source or through planning measures that reduce sound exposure. While the current Noise Element does not contain a land use compatibility table, Table H summarizes the criteria for the maximum acceptable noise levels by land use type.

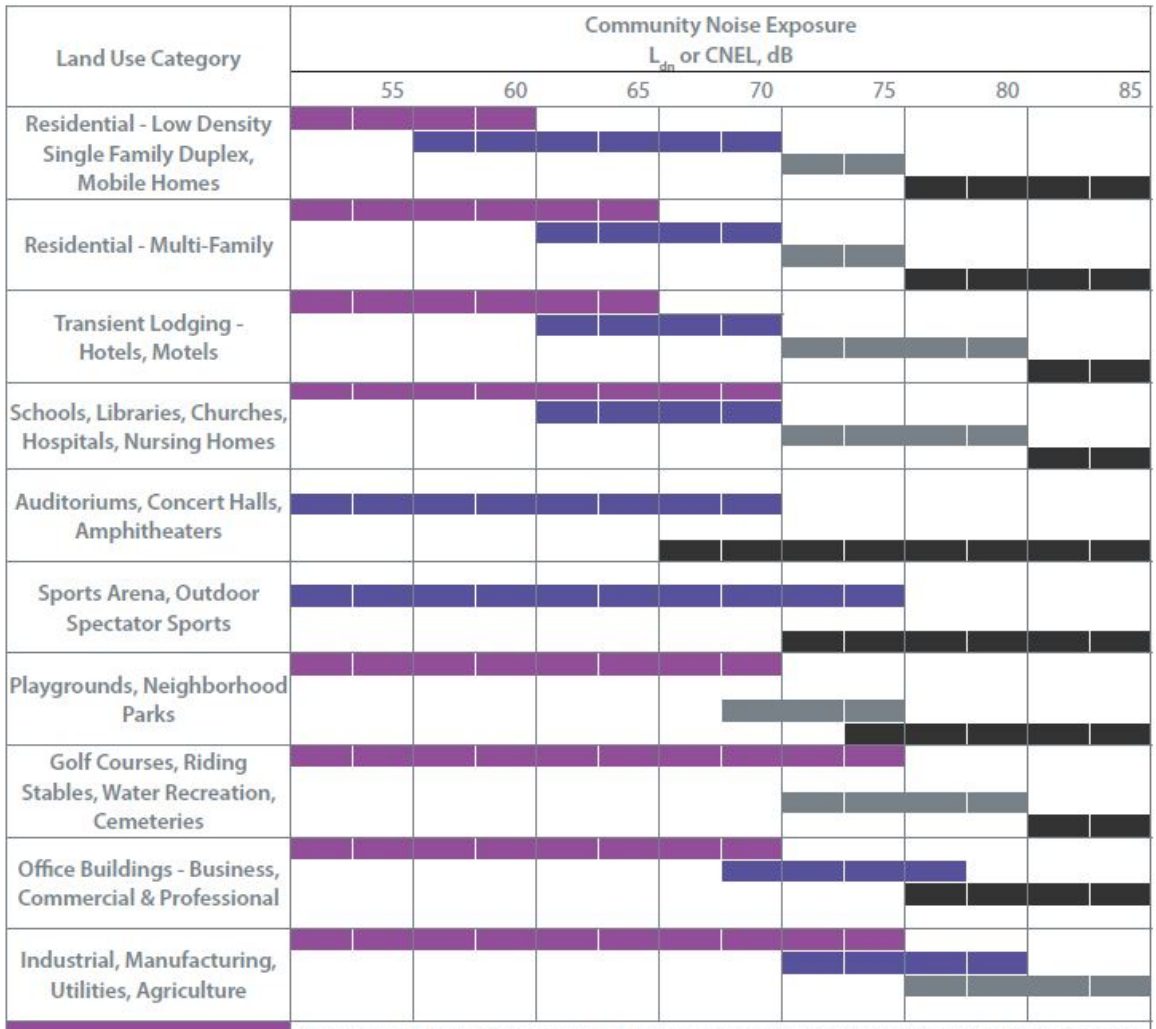
---

[3] State of California Governor's Office of Planning and Research, 2017. *State of California General Plan Guidelines*. Appendix D: Noise Element Guidelines. July.

[4] City of Long Beach. 1975. *Long Beach General Plan*. Noise Element. Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=3051 (accessed June 3, 2019).

Please also note that the City is currently in the process of updating the General Plan Noise Element. Information regarding this process can be found at the following website: http://www.lbds.info/noise_element_update/.

Table G: Community Noise Exposure L_{dn} or CNEL (dB)



Normally Acceptable	*Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.*
Conditionally Acceptable	*New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.*
Normally Unacceptable	*New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.*
Clearly Unacceptable	*New construction or development should generally not be undertaken.*

Source: California Office of Planning and Research, General Plan Guidelines (2017), Appendix D.

Table H: Recommended Criteria for Maximum Acceptable Noise Levels[1] in A-Weighted Decibels (dBA)

Major Land Use Type	Stationary Source Land Use Noise Standards			
	Outdoor			Indoor
	Maximum Single Hourly Peak	L_{10}[2]	L_{50}[3]	L_{dn}[4]
Residential[5] (7:00 a.m. to 10:00 p.m.)	70	55	45	45
Residential[5] (10:00 p.m. to 7:00 a.m.)	60	45	35	35
Commercial (anytime)	75	65	55	--[6]
Industrial (anytime)	85	70	60	--[6]

Source: City of Long Beach Noise Element, Table 11 (1975).

[1] Based on existing ambient level ranges in Long Beach and recommended U.S. Environmental Protection Agency ratios and standards for interference and annoyance.

[2] Noise levels exceeded 10 percent of the time.

[3] Noise levels exceeded 50 percent of the time.

[4] Day-night average sound level. The 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime levels.

[5] Includes all residential categories and all noise-sensitive land uses (e.g., hospitals and schools).

[6] Because different types of commercial and industrial activities appear to be associated with different noise levels, identification of a maximum indoor level for activity interference is unfeasible.

Goals, Plans, and Policies

One of the major functions of a General Plan Noise Element is to establish goals to strive for, plans to help achieve those goals, and polices which regulate both current and future developments and all activities within the City limits. In the current version of the City's Noise Element, these are referenced as Implementation Strategies, Categorical Recommendations, and Transportation Noise Reduction Measures.

City of Long Beach Municipal Code

The City of Long Beach addresses noise impacts in its Title 8: Health and Safety, Chapter 8.80, Noise, and sets regulations to minimize airport noise in Title 16: Public Facilities and Historical Landmarks, Chapter 16.43, Airport Noise Compatibility.[5] The Municipal Code establishes exterior and interior noise standards at receiving land uses and establishes permitted hours of construction activity noise as described below.

Chapter 8.80, Noise, establishes exterior and interior noise limits for the generation of sound within the City. The maximum noise levels vary based on the receiving land use type and the cumulative duration of noise. The ordinance also limits noise generated by construction. The Municipal Code restricts construction activities to weekdays and federal holidays between the hours of 7:00 a.m. and 7:00 p.m. and on Saturdays, restricts construction to between the hours of 9:00 a.m. and 6:00 p.m., except for emergency work. Construction work on Sundays is prohibited unless the City's Noise Control Officer issues a permit. The permit may allow work on Sundays between 9:00 a.m. and 6:00 p.m. Additionally, Chapter 16.43, Airport Noise Compatibility, establishes cumulative noise limits and noise budgets for properties in the vicinity of the Airport. The Municipal Code establishes

[5] City of Long Beach. 2019. Municipal Code. February.

a goal that incompatible property in the vicinity of the airport shall not be exposed to noise above 65 dBA CNEL.

Loading and unloading activities are also regulated under the noise ordinance. The ordinance states that loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. is restricted to the noise level provisions of Exterior Noise Limits shown in Table I and the Interior Noise Limits shown in Table J.

Table I: Maximum Exterior Local Noise Criteria

Receiving Land Use District	Maximum Noise Criteria (dB L_{max})	
	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
District One — Predominantly residential with other land use types also present	50	45
District Two — Predominantly commercial with other land use types also present	60	55
District Three[1] — Predominantly industrial with other land use types also present	65	65
District Four[1] — Predominantly industrial with other land types use also present	70	70
District Five — Airport, freeways, and waterways regulated by other agencies	Regulated by other agencies and laws	

Source: City of Long Beach Municipal Code (2018).
[1] Districts Three and Four limits are intended primarily for use at their boundaries rather than for noise control within those districts.
dB = decibel(s)
L_{max} = maximum instantaneous noise level

Table J: Interior Noise Limits

Receiving Land Use District	Type of Land Use	Time Interval	Allowable Interior Noise Level (dBA)
All	Residential	10:00 p.m.–7:00 a.m. 7:00 a.m. –10:00 p.m.	35 45
All	School	7:00 a.m. –10:00 p.m. (while school is in session)	45
Hospital, designated quiet zones, and noise-sensitive zones		Any time	40

Source: City of Long Beach Municipal Code (2018).
dBA = A-weighted decibel(s)

Additionally, the ordinance states that operating or permitting the operation of any device that creates vibration, which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 ft from the source if on a public space or public right-of-way, is prohibited.

SETTING

This section describes the existing noise environment in the City of Long Beach. Noise monitoring, traffic modeling, and noise modeling were used to quantify existing noise levels in the City.

Existing Sensitive Land Uses

Noise sensitive receptors in the City include residences, schools, hospitals, churches, and similar uses that are sensitive to noise. Construction and operation of development allowed under the LUE could adversely affect nearby noise-sensitive land uses and could place new sensitive receptors in areas of unacceptable noise exposure. Although CEQA generally does not require analysis or mitigation of the impact of existing environmental conditions on a project, including a project's future users or residents, the City, as the lead agency, has authority to require measures to protect public health and safety. Therefore, this document includes a discussion of the project's potential to introduce new sensitive receptors to areas where conditions would be exacerbated by project implementation.

Overview of the Existing Noise Environment

In the City of Long Beach, the dominant source of noise is transportation noise, including vehicular traffic, rail, and airport noise. Industrial and mechanical equipment are also contributors to the noise environment in the City, as are intermittent sources such as construction equipment and leaf blowers. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust systems. Airport-related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. Existing noise sources are further discussed below. Noise contours for the City's existing major noise sources shown in Figure 3 below.

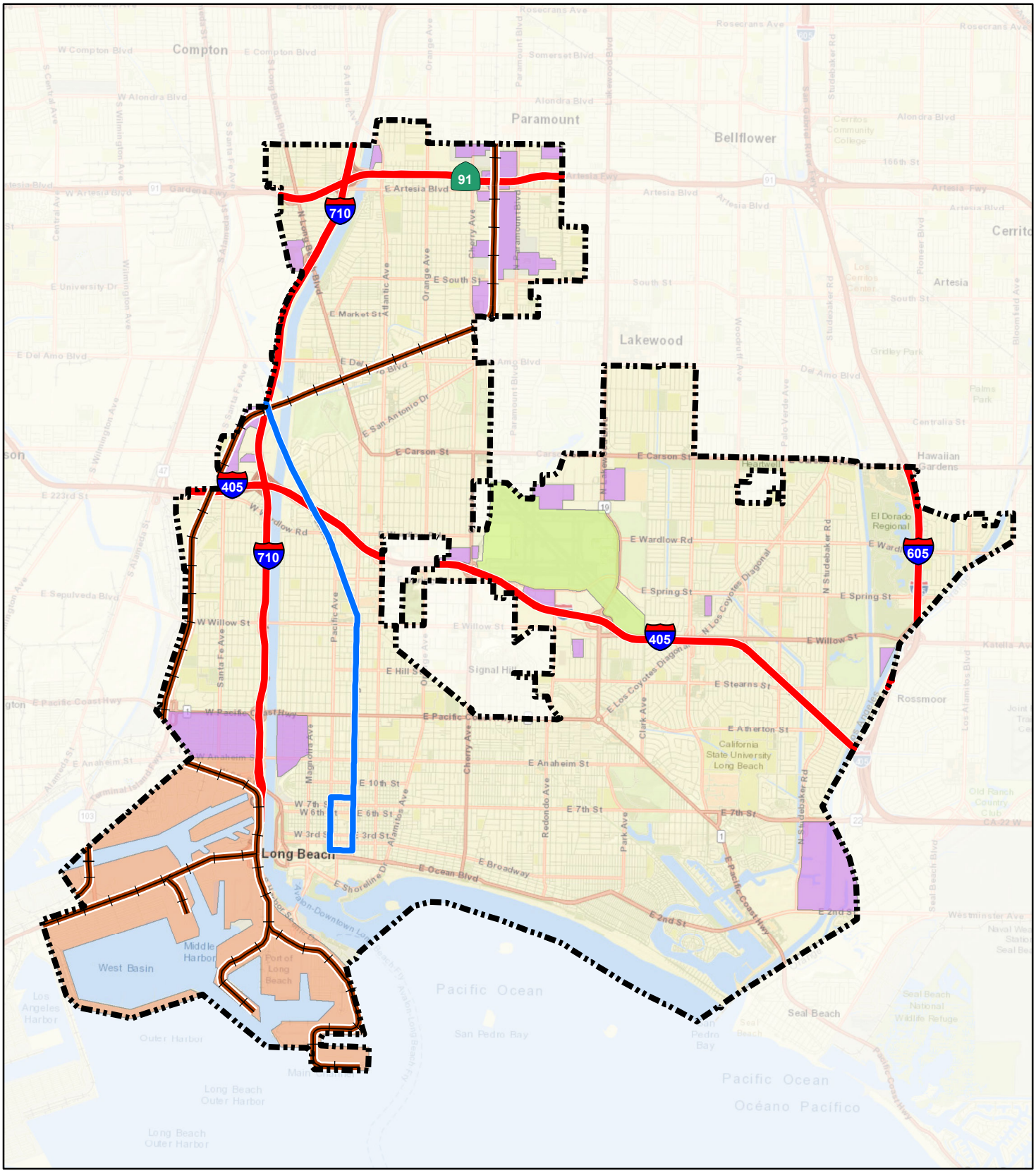
Ambient Noise Levels

To assess existing noise levels, LSA conducted eleven short-term (15-minute) noise measurements in the City on February 11, 2016. The noise measurements were recorded at different locations within the City based on the Major Areas of Change identified in the LUE. Noise monitoring locations are shown in Figure 4. Noise measurement data collected during monitoring is summarized in Table K. The meteorological conditions at the time of the noise monitoring are shown in Table L. The short-term noise measurements indicate that ambient noise in the City ranges from approximately 62.0 dBA to 76.2 dBA L_{eq}. Traffic on surrounding roadways was reported as the primary noise source.

Existing Roadway Noise Levels

Motor vehicles with their distinctive noise characteristics are one of the primary sources of noise in Long Beach. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Major contributing roadway noise sources include Interstates 710 and 405, State Route 91, Pacific Coast Highway (PCH) and local roadways including Long Beach Boulevard, Santa Fe Avenue, Atlantic Avenue, Alamitos Avenue, 7th Street, 2nd Street, Ocean Boulevard, and other arterial and collector roadways throughout the City.

This page intentionally left blank



LSA

LEGEND

- Long Beach City Boundary
- Long Beach Airport
- Port of Long Beach
- Industrial Area
- Freeway
- Metro Blue Line
- Freight Line

0 0.75 1.5
MILES

SOURCE: Esri (2016); LSA (5/2017)

I:\RDG1701\GIS\ExistingMajorNoiseSources.mxd (5/13/2019)

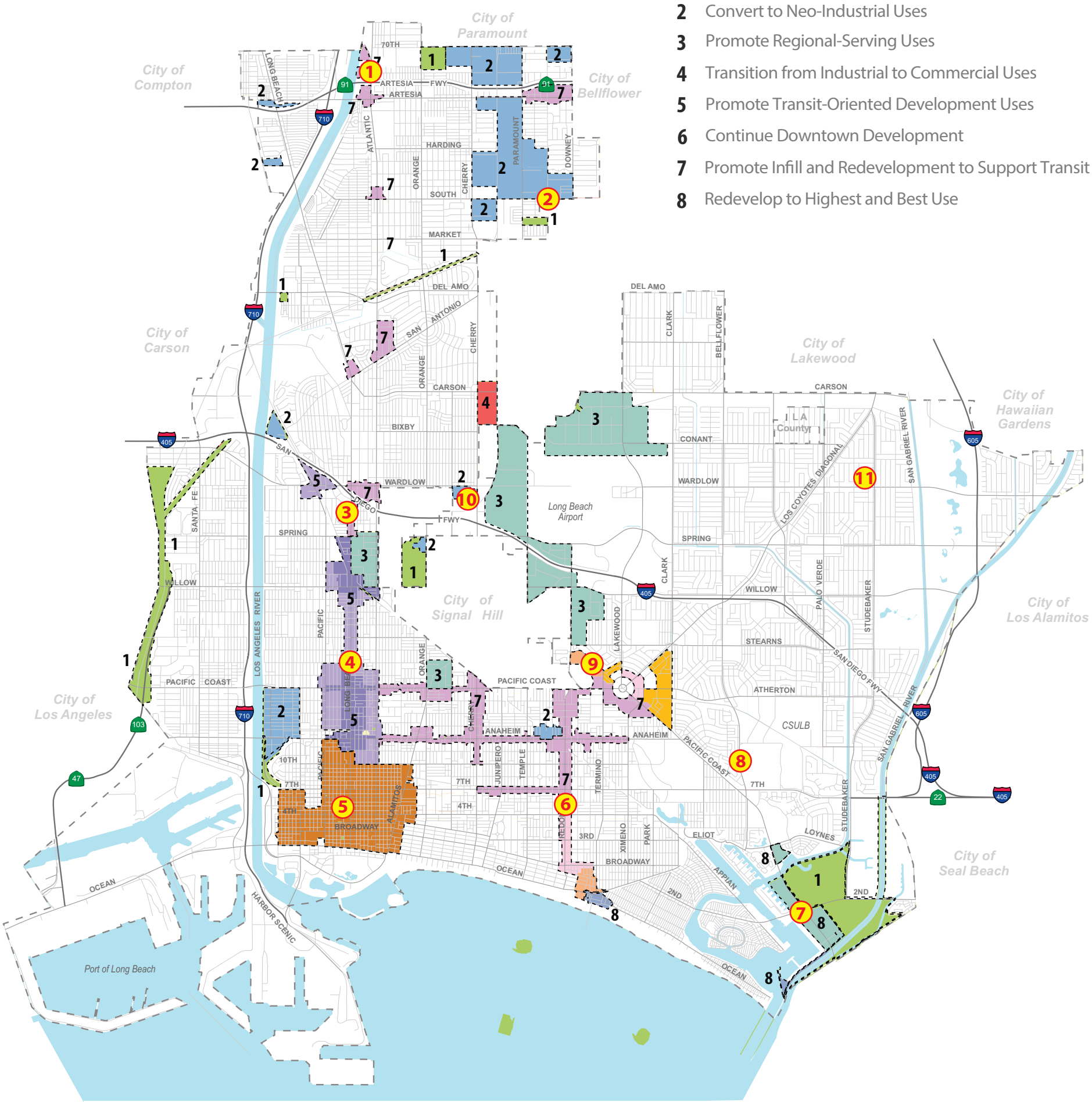
FIGURE 3

Long Beach General Plan

Land Use and Urban Design Elements

Existing Major Noise Sources

This page intentionally left blank



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

LSA

LEGEND

(#) - Noise Monitoring Locations

N

0 .5 1
MILE

SOURCE: Proposed Land Use Element, City of Long Beach, March 2018

I:\CLB1804\G\Chapter 3\Noise Monitoring Locations.cdr (3/19/2019)

FIGURE 4

Long Beach General Plan
Land Use and Urban Design Elements
Noise Monitoring Locations

This page intentionally left blank

Table K: Existing Ambient Noise Monitoring Results (dBA)

Location Number	Location Description	Start Time	L_{eq} [1]	L_{max} [2]	L_{min} [3]	Primary Noise Sources
ST-1	6857–6909 Atlantic Avenue	7:27 a.m.	66.6	82.1	59.6	Traffic on Atlantic Avenue, faint traffic on I-710, trucks with trailers turning in nearby lot
ST-2	3114 South Street – Church of Latter Day Saints	7:58 a.m.	70.3	80.8	53.6	Traffic on South Street, birds
ST-3	3115 Long Beach Boulevard	8:58 a.m.	63.6	73.6	49.2	Traffic on Long Beach Boulevard, back up beeper across Long Beach Boulevard, birds
ST-4	1940 Long Beach Boulevard	9:35 a.m.	65.7	80.9	45.0	Traffic on Long Beach Boulevard, birds, distant music
ST-5	614 Locust Avenue in parking lot adjacent to 6th Street	10:13 a.m.	63.3	77.3	47.7	Traffic on 6th Street, birds
ST-6	600 Redondo Avenue in parking lot	10:51 a.m.	64.0	81.5	45.5	Traffic on Redondo Avenue, car with loud music
ST-7	5800–6462 E. Marina Drive adjacent to 2nd Street, near bus stop	2:11 p.m.	62.3	81.5	49.0	Traffic on 2nd Street, birds
ST-8	California State University Long Beach near Bellflower Boulevard and Beach Drive	1:15 p.m.	66.0	74.8	49.3	Traffic on Bellflower Boulevard, birds, music in car, horn
ST-9	3500 Hathaway Avenue apartment complex open grass area	11:42 a.m.	62.0	75.0	42.4	Traffic on Hathaway Avenue, distant music in apartment
ST-10	3245 Cherry Avenue in parking area	8:31 a.m.	76.2	99.3	61.3	Traffic on Cherry Avenue
ST-11	3401 Studebaker Road in parking lot adjacent to Wardlow Road	2:47 p.m.	62.5	79.2	46.9	Traffic on Wardlow Road

Source: LSA (February 2016).
[1] L_{eq} represents the average of the sound energy occurring over the measurement time period.
[2] L_{max} is the highest sound level measured during the measurement time period.
[3] L_{min} is the lowest sound level measured during the measurement time period.
dBA = A-weighted decibels I-710 = Interstate 710 mph = miles per hour

Table L: Meteorological Conditions During Ambient Noise Monitoring

Location Number	Maximum Wind Speed (mph)	Average Wind Speed (mph)	Temperature (˚F)	Relative Humidity (%)
ST-1	0.8	0.0	63.2	38.8
ST-2	0.0	0.0	69.4	38.4
ST-3	3.4	1.6	68.6	29.6
ST-4	0.0	0.0	80.9	22.3
ST-5	3.5	2.3	75.7	27.1
ST-6	2.3	1.5	78.5	29.8
ST-7	1.3	1.0	81.0	27.9
ST-8	4.1	1.8	81.3	33.3
ST-9	3.7	1.0	85.1	27.5
ST-10	1.2	0.9	67.1	35.1
ST-11	4.9	3.1	83.6	17.1

Source: LSA (February 2016). mph = miles per hour

Existing Rail Noise Levels

Currently, three freight rail lines pass through the City which are operated by Burlington Northern Santa Fe (BNSF) Railway, the Union Pacific Railroad (UPRR), and the Pacific Harbor Line Incorporated (PHL). The rail lines run north-south through the west side of the City, and through the northwest corner of the City, around the neighborhood of North Long Beach.

The City is also subject to operational rail noise. The Los Angeles County Metropolitan Transportation Authority (Metro) Rail Blue line (Blue line) passes north to south through Long Beach along Long Beach Boulevard. The Metro services hours are from approximately 4:45 a.m. until 1:00 a.m. on weekdays and from 4:45 a.m. until 2:00 a.m. on weekends. Land uses surrounding the rail line include multi- and single-family residential, and commercial uses, the Senior Arts Colony, high-rise office towers, the Pacific Coast Campus of Long Beach City College, and the Long Beach Transit Mall. Seven different Metro stations serve local neighborhoods throughout the City. Activity on the Blue line affects the ambient noise environment along the railroad alignment.

Based on Federal Railroad Administration crossing inventories for various crossings in the City, typical operations along the main rail line include up to 74 trains per day that range in speed from 5 to 25 miles per hour (mph).

Existing Stationary Source Noise Levels

A wide variety of existing stationary sources contribute to noise throughout the City of Long Beach, which include heating ventilation and cooling (HVAC) mechanical systems, delivery truck idling and loading/unloading activities, and recreational and parking lot activities (such as slamming car doors and people talking). Of these noise sources, noise generated by delivery truck activity typically generates the highest maximum noise levels. Delivery truck loading and unloading activities can result in maximum noise levels of 75 dBA to 85 dBA L_{max} at 50 ft. Typical parking lot activities, such as people conversing or doors slamming, generate approximately 60 dBA to 70 dBA L_{max} at 50 ft. Other sources of noise include commercial centers and industrial zones that emit noise during operation. Domestic noise sources, such as leaf blowers, and gas-powered lawn equipment, etc., are common stationary noise sources and can produce noise levels measured at 70 dBA to 75 dBA at 50 ft.[6]

Existing Port of Long Beach Noise Levels

Port of Long Beach operations noise levels are generally limited to the areas within the perimeter of the Port. Noise associated with the Port includes cranes, vessel horns, forklifts, and truck activities. Due to the distance between the nearest sensitive receptors from daily Port operations, noise is rarely audible at these sensitive receptor locations. Heavy truck traffic associated with the transport of cargo along the I-710 corridor is the primary source of noise associated with the Port. Impacts associated with the Port of Long Beach, including noise, were assessed in the *Port of Long Beach Community Impact Study* in July 2016.

---

[6] Noise Free America. *Citizens for a Quieter Sacramento Rebuttal to the CLCA Position on Leaf Blowers.* Website: https://noisefree.org/sources-of-noise/lawn-and-garden-equipment/ (accessed March 2019).

Existing Airport Noise Levels

Long Beach Airport is a public airport centrally located in the City, approximately 3 miles northeast of Downtown. This airport has limited passenger flights and is restricted by ordinances that minimize airport-related noise. Although commercial flights are restricted, several charters, private aviation, flight schools, law enforcement flights, helicopters, advertising blimps, and planes towing advertising banners still frequently operate from this airport.

Operations at the Long Beach Airport typically occur within the daytime hours of 7:00 a.m. to 10:00 p.m., with the exception of occasional unscheduled landings that occur after 10:00 p.m., and emergency and police helicopter activities. *The Long Beach Airport Community Guide to Aircraft Noise* presents factual information on the City of Long Beach Airport Noise Compatibility Ordinance (Long Beach Municipal Code Chapter 16.43) and Long Beach Airport's efforts to minimize aircraft noise over nearby neighborhoods. While the City is not able to control the flight paths, typical operations include approaches from the southeast of the airport and departures taking off in a northwest direction.

Other airports with aircraft activity that affect the ambient noise environment within the City limits include Los Angeles International Airport and John Wayne Airport. Los Angeles International Airport is located approximately 20 miles northwest of the City, and John Wayne Airport is located approximately 30 miles southwest of the City. Although noise from aircraft activity is occasionally audible throughout the City, the City is not located within the 65 dBA CNEL noise contour of these airports.

Existing Vibration Sources

Vibration Sources

Major vibration sources in the City include construction activities, rail operations, and heavy vehicle traffic. Other sources which have the potential to cause vibration impacts are aircraft operations, low-frequency music and some stationary sources. Similar to noise standards, cities can adopt vibration exposure standards regarding the sensitivity of land uses which may be affected. In relation to vibration impacts, there are two factors that are considered to assessing the level of impact expected: the potential for damage to a building or structure and the potential of annoyance to people. Also similar to potential noise impacts, the most efficient actions to help reduce vibration impacts occur during the planning and permitting phases of any project or development.

Construction Activity Vibration

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans. The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.2 to 0.3 millimeters per second (0.008 to 0.012 inches per

second), PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels (e.g., people in an urban environment) may tolerate a higher vibration level. Structural damage can be classified as cosmetic only (e.g., minor cracking of building elements) or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to a building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity (e.g., impact pile driving) occurs immediately adjacent to the structure.

Rail Activity Related Vibration

Rail operations are potential sources of substantial ground-borne vibration depending on distance, the type and the speed of trains, and the type of railroad track. People's response to ground-borne vibration has been correlated best with the velocity of the ground. The velocity of the ground is expressed on the decibel scale. The reference velocity is 1 x 10-6 inches per second. RMS, which equals 0 vibration velocity decibels (VdB), and 1 inch per second equals 120 VdB. Although not a universally accepted notation, the abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

One of the problems with developing suitable criteria for ground-borne vibration is the limited research into human response to vibration and, more importantly, human annoyance inside buildings. The United States Department of Transportation Federal Transit Administration has developed rational vibration limits that can be used to evaluate human annoyance to ground-borne vibration. These criteria are primarily based on experience with passenger train operations (e.g., rapid transit and commuter rail systems). The main difference between passenger and freight operations is the time duration of individual events; a passenger train lasts a few seconds whereas a long freight train may last several minutes, depending on speed and length.

Heavy Vehicles and Buses

Ground-borne vibration levels from heavy trucks and buses are not normally perceptible, especially if roadway surfaces are smooth. Buses and trucks typically generate ground-borne vibration levels of about 63 VdB at a distance of 25 ft when traveling at a speed of 30 mph. Higher vibration levels can occur when buses or trucks travel at higher rates of speed or when the pavement is in poor condition. Vibration levels below 65 VdB are below the threshold for human perception.

Other Sources of Vibration Annoyance

In addition to sources that have vibration impacts which translate through the ground surface between source and receptor, sources which generate high levels of low-frequency noise may generate vibration through air. These sources may include aircraft and helicopter operations, low-frequency music and other large stationary sources.

PROJECT IMPACTS

Implementation of the LUE/UDE would be considered to result in significant noise impacts if it would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generate excessive ground-borne vibration or ground-borne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

A 3 dBA increase is considered to be perceptible by the human ear in an outdoor environment. Therefore, the significance criteria define a significant impact to occur if the project would result in a substantial (3 dBA or greater) permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

CEQA generally does not require analysis or mitigation of the impact of existing environmental conditions on a project, including a project's future users or residents. However, as with other laws and regulations enforced by other agencies that protect public health and safety, the City, as the lead agency, has authority other than CEQA to require measures to protect public health and safety. Therefore, this document includes an evaluation of the environment's impacts on the project and includes an assessment of the project’s potential to introduce new sensitive receptors to areas where conditions would be exacerbated by project implementation.

Noise Exposure

Major land use changes proposed as part of the LUE/UDE are identified as Major Areas of Change, and are illustrated on Figure 2. There are eight primary change areas associated with the updated LUE.

- The first Major Area of Change involves the creation, restoration, and preservation of more open space throughout the City.
- The second Major Area of Change proposes to convert industrial edges and districts to Neo-Industrial uses.
- The third Major Area of Change aims to promote regional-serving uses by maintaining existing regional-serving facilities throughout the City.
- The fourth Major Area of Change proposes to convert some industrial uses to commercial and regional-serving uses.
- The fifth Major Area of Change aims to promote transit-oriented development.
- The sixth Major Area of Change aims to continue development in the Downtown area.
- The seventh Major Area of Change aims to promote infill and redevelopment to support transit.

- The eighth Major Area of Change aims to revitalize the Belmont Pier Complex and Alamitos Bay to their "highest and best use."

In total, the LUE proposes changes to approximately 13 percent of the land area in the City. The identification of these Major Areas of Change reflects the City's desire to address land use issues within these areas.

Development allowed by the LUE may include the development of new sensitive land uses in the vicinity of existing noise sources. Development allowed under the proposed LUE may include installation or creation of new stationary sources of noise, or could include the development of new sensitive land uses in the vicinity of existing noise sources. For commercial or industrial uses, these noise sources could include loading/unloading operations, generators, and outdoor speakers; for residential uses, stationary noise sources may include air conditioners or pool pumps. These stationary sources of noise would have the potential to disturb adjacent sensitive receptors. However, noise generation would continue to be limited by the City's Noise Ordinance, Chapter 8.80.

Implementation of the LUE is not anticipated to result in increased railroad operations within the City. However, the LUE proposes the Transit-Oriented Development PlaceType, which would allow future multi-family developments to be located along the Metro Blue line fixed rail route. Locating multi-family developments near the light rail corridor could expose sensitive land uses to operational rail noise.

The LUE/UDE includes policies that protect sensitive receptors from stationary noise sources and encourage land use compatibility and are included below:

Urban Design Element Policies

- **Policy UD 14-2:** Acknowledge transitions between commercial and residential uses by transitioning in height, scale, and intensity in a thoughtful way to provide a buffer to lower density residential development and transition from higher to lower density.
- **Policy UD 14-4**: Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on the residential living environment.
- **Policy UD 14-5:** Promote commercial center and corridor development compatibility with adjacent residential uses, including ensuring that project design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, building massing, signage, lighting, trash enclosures and noise generating uses and areas.
- **Policy UD 19-2:** Ensure that project site design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, signage, lighting, trash enclosures, and sound systems.
- **Policy UD 22-1:** Encourage the massing of buildings and setbacks behind the Long Beach Boulevard light rail corridor to transition from moderate to low, in order to gracefully handle the transition from more intense to less intense development.

- **Policy UD 23-1:** Provide adequate setbacks, along with visual and noise buffers, to separate automobile-oriented developments from adjacent residential neighborhoods.
- **Policy UD 24-3**: Promote the incorporation of buffers between residential and industrial uses, such as surface parking, landscaped open space buffers, and lower buildings.
- **Policy UD 24-5:** Encourage incompatible land uses and operations to be located away from and screened from view of residential neighborhoods.
- **Policy UD 26-2:** Encourage separation of incompatible land uses with site planning strategies and appropriate design treatments.

Land Use Element Policies

- **LU Policy 9-1:** Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on residential living environments.
- **LU Policy 16-6:** Work with regional agencies, residents, and businesses to preserve established homes, businesses, and open spaces. Limit the exposure of toxic pollutants and vehicle noise. Minimize traffic issues impacting residential neighborhoods resulting from freeway expansion and other similar large-scale projects.
- **LU Policy 16-8:** Require an acoustical analysis prior to project approval for projects subject to CEQA review, for all noise sensitive projects located in an area with noise levels greater than 60 dBA CNEL. All new residential land uses shall be designed to maintain a standard of 45 dBA CNEL or less in building interiors, consistent with the General Plan. Noise reduction measures to achieve this noise level could include, but are not limited to, forced air ventilation so that windows can remain closed and/or upgraded wall and window assemblies.
- **LU Policy 16-9:** The Los Angeles County Metropolitan Transportation Authority (Metro) shall be notified of any planned development or construction activities on properties that are within 100 feet of Metro right-of-way (ROW). Metro must be provided the opportunity early in the development process to review plans and comment, if necessary, to ensure that the project does not impact the safe operation of Metro transit service and/or compromise Metro infrastructure. As the project design advances, Metro may review construction drawings and work plans for potential impacts to the Metro system and to ensure safe operation of cranes, overhead loads, excavation, drainage, worker safety, and other construction activities. Projects immediately adjacent to Metro ROW may be required to include a setback from the Metro property line and to accommodate construction and maintenance activities on private property. Developers should not assume that Metro will grant a right-of-entry permit for construction or maintenance activities on Metro property. For this reason, Metro recommends a minimum five (5) foot setback from the adjacent Metro property line. At the City's discretion and Metro's request, a noise easement may be required to deed Metro the right to cause in-said easement noise, vibrations, and other effects that may be caused by the operation of transit vehicles.
- **LU Policy 16-10:** Locate schools and other sensitive receptors at least 500 feet away from freeways, as feasible.

- **Bixby Knolls Land Use Strategy 1:** Continue to monitor noise levels and implement the Long Beach Noise Ordinance, especially as it pertains to noise generated from airport-related activities.
- **Westside and Wrigley Land Use Strategy 6:** Uses allowed in the Edison and UPRR utility rights-of-way must be designed to have minimal dust, noise, traffic, visual and other nuisance impacts on residential neighbors. These properties shall be screened with landscape (green) buffers and proactively maintained.

Several of the LUE and UDE policies, specifically Policy UD 26-2, require new development projects to incorporate site planning and project design strategies to separate or buffer neighborhoods from incompatible activities or land uses.

Development allowed by the LUE and UDE may include the development of new sensitive land uses in the vicinity of existing noise sources. The LUE and UDE includes policies that promote traffic-calming measures in neighborhoods to provide safe and secure neighborhoods and encourage streets to be repurposed to accommodate slower speeds and better serve pedestrians, cyclists, and local transit. The dominant noise source in the City of Long Beach is traffic-related noise. As shown in Table K, the short-term noise measurements indicate that ambient noise in the City ranges from approximately 62.0 dBA to 76.2 dBA L_{eq}. The noise measurements were recorded at different locations within the City based on the Major Areas of Change identified in the LUE/UDE.

The City of Long Beach Municipal Code addresses noise in Title 8: Health and Safety, Chapter 8.80, Noise. The primary objective of Chapter 8.80 is to establish exterior and interior noise standards at receiving land uses and construction activity noise regulations. As discussed above, implementation of the LUE/UDE would include policies and strategies that protect sensitive receptors from stationary noise sources in excess of acceptable levels. Therefore, implementation of the LUE/UDE would not expose persons to noise levels in excess of the City's Municipal Code.

In addition, any new noise generating sources would be subject to compliance with Chapter 8.80, Noise, including Table A: Exterior Noise Limits, of the City's Municipal Code, which sets exterior noise standards for the various land uses within the City.

Generation of Excessive Ground-borne Vibration

Common sources of ground-borne vibration and noise include trains and construction activities such as blasting, pile driving, and operating heavy earthmoving equipment. Typically, the main effect of ground-borne vibration and noise is to cause annoyances for occupants of nearby buildings.

Chapter 8.80 of the City's Noise Ordinance limits the operation of any device that creates vibration, including pile driving, that is above the vibration perception threshold. Any construction activities associated with implementation of the LUE/UDE would be required to comply with the Noise Ordinance requirements. However, because the construction of future projects associated with implementation of the proposed project could result in the generation of ground-borne vibration, future discretionary projects occurring under the proposed project would also be required to comply with Mitigation Measure MM NOI-1. Specifically, Mitigation Measure MM NOI-1 would require future construction projects implemented under the LUE/UDE to implement construction

best management practices to minimize vibration impacts for nearby sensitive receptors to a less than significant level. Compliance with Mitigation Measure MM NOI-1 would serve to reduce impacts from construction methods related to the exposure of sensitive receptors to excessive ground-borne vibration or noise levels.

Moreover, as discussed above, implementation of the proposed project would include policies and strategies that protect sensitive receptors from vibration in excess of acceptable levels. However, construction projects may result in an increase in groundborne vibration, and mitigation would be required. Mitigation Measure MM NOI-1 would require future construction projects implemented under the LUE/UDE to implement construction best management practices to minimize vibration impacts for nearby sensitive receptors to a less than significant level.

Substantial Permanent Increase in Ambient Noise Levels

Stationary-Source Noise

Development allowed under the proposed LUE may include the installation or creation of new stationary sources of noise, or could include the development of new sensitive land uses in the vicinity of existing noise sources. For commercial or industrial uses, these noise sources could include loading/unloading operations, generators, and outdoor speakers; for residential uses, stationary noise sources may include air conditioners or pool pumps. These stationary sources of noise would have the potential to disturb adjacent sensitive receptors. However, noise generation would continue to be limited by the City's Noise Ordinance, Chapter 8.80.

Implementation of the LUE is not anticipated to result in increased railroad operations within the City. However, the LUE proposes the TOD PlaceType, which would allow future multifamily developments to be located along the Metro Blue Line fixed rail route. Locating multifamily developments near the light-rail corridor could expose sensitive land uses to operational rail noise.

The City's Municipal Code addresses noise in Title 8: Health and Safety, Chapter 8.80, Noise. The primary objective of Chapter 8.80 is to establish exterior and interior noise standards at receiving land uses. In addition to the policies identified the Noise Element of the General Plan to minimize the effects of noise on noise-sensitive uses, the LUE/UDE includes the following policies and land use strategies to protect sensitive receptors from stationary noise sources and encourage land use compatibility: LU Policy 9-1, LU Policy 16-6, LU Policy 16-8, LU Policy 16-9, LU Policy 16-10, Bixby Knolls Land Use Strategy 1, Westside and Wrigley Land Use Strategy 6, Eastside Land Use Strategy 4, Central Land Use Strategy 3, Traffic Circle Land Use Strategy 3, Midshore Land Use Strategy 5, Downtown Land Use Strategy 7, Policy UD 14-2, Policy UD 14-4, Policy UD 14-5, Policy UD 19-2, Policy UD 22-1, Policy UD 23-1, Policy UD 24-3, Policy UD 24-5, and Policy UD 26-2 (refer to Subsection 4.5.7.1).

Development allowed by the LUE and UDE may include the development of new sensitive land uses in the vicinity of existing noise sources and could potentially subject sensitive land uses to long-term noise impacts. However, several of the LUE and UDE policies, specifically Policy UD 26-2, require new development projects to incorporate site planning and project design strategies to separate or buffer neighborhoods from incompatible activities or land uses. Furthermore, to ensure that new development will meet the interior noise standards identified by the State, the LUE has incorporated

LU Policy 16-8. LU Policy 16-8 requires that all new developments in areas with noise levels greater than 60 dBA CNEL prepare an acoustical analysis and requires new residential land uses to be designed to maintain a standard of 45 dBA L_{dn} or less in building interiors. Policy UD 19-2 ensures that project site design and function minimizes potential adverse impacts of vehicle access, parking and loading facilities, signage, lighting, trash enclosures, and sound systems. In addition, any new noise-generating sources would be subject to compliance with Chapter 8.80, Noise (including Table A: Exterior Noise Limits), of the City's Municipal Code (Table I of this Noise and Vibration analysis), which sets exterior noise standards for the various land uses within the City. As discussed above, implementation of the LUE/UDE would include policies and strategies that would ensure that new development projects incorporate site planning and project design strategies to separate or buffer neighborhoods from incompatible activities or land uses, which would protect sensitive receptors from stationary noise sources in excess of acceptable levels. Therefore, implementation of the LUE/UDE would not expose persons to noise levels in excess of the City's Municipal Code.

Traffic Noise

Potential sources of permanent increase in ambient noise include increases associated with an increase in traffic on roadways in the plan area. It is projected that traffic volumes on some streets within the City would increase due to the growth envisioned in the LUE/UDE. This increase in traffic volumes would result in increased traffic noise levels compared to existing conditions.

The significance criteria define a significant impact to occur if the project would result in a substantial (3 dBA or greater) permanent increase in ambient noise levels in the project vicinity above levels existing without the project. For traffic noise to increase by 3 dBA, traffic volumes would have to double. As noted in the Setting section of this analysis, noise increases of 3 dBA or more are generally considered to be the smallest increases in noise levels readily perceptible in suburban or urban outdoor environments. The average daily traffic (ADT) volumes were used to determine the CNEL change. The following formula was used to calculate the change in noise levels with traffic volumes:

$$(\Delta) = 10\log\left(\frac{a}{b}\right)$$

where: (Δ) = change in noise level (dBA) due to implementation of the Project
a = future ADT volume with the Project
b = future ADT volume without Project

Table M shows the ADT and project-related traffic noise level change under the existing and 2040 with and without project conditions for roadway segments in the City. As shown in Table M, the project-related traffic noise increase would be up to 2.1 dBA, which is considered less than the threshold of perceptibility for humans. Future traffic noise contours, consistent with Land Use Element and Mobility Element assumptions, have been modeled and are shown in Figure 5.

Table M: Traffic Noise Levels Assessment for the Proposed Project

Street Name	Segment	Existing Conditions			Year 2040			
		Volume (ADT)		Change in Noise Level (dBA CNEL)	Volume (ADT)		Change in Noise Level (dBA CNEL)	Increase over Existing Conditions (dBA CNEL)
		No Project	With Project		No Project	With Project		
Avalon Boulevard	North of PCH	16,820	16,820	0.0	19,440	19,440	0.0	0.6
	PCH to Anaheim Street	16,410	16,360	0.0	18,542	18,492	0.0	0.5
	South of PCH	9,700	9,700	0.0	10,004	10,004	0.0	0.1
Wilmington Avenue	North of I-405	26,420	25,685	-0.1	30,832	30,097	-0.1	0.6
	I-405 to Sepulveda Boulevard	17,670	17,670	0.0	20,422	20,422	0.0	0.6
Terminal Island Freeway	South of Willow Street	12,620	12,760	0.0	14,818	14,958	0.0	0.7
Santa Fe Avenue	North of Wardlow Road	27,140	26,948	0.0	31,367	31,175	0.0	0.6
	Wardlow Road to Willow Street	21,670	21,569	0.0	24,455	24,354	0.0	0.5
	Willow Street to PCH	14,570	14,662	0.0	16,473	16,565	0.0	0.6
	PCH to Anaheim Street	12,470	12,687	0.1	14,056	14,273	0.1	0.6
Magnolia Avenue	North of Ocean Boulevard	9,190	9,190	0.0	10,621	10,621	0.0	0.6
Pacific Avenue	North of 7th Street	8,180	8,180	0.0	9,454	9,454	0.0	0.6
	7th Street to 6th Street	8,320	8,310	0.0	9,959	9,949	0.0	0.8
	6th Street to 3rd Street	8,670	8,680	0.0	10,127	10,137	0.0	0.7
	3rd Street to Broadway	7,730	7,900	0.1	8,994	9,164	0.1	0.7
	Broadway to Ocean Boulevard	11,840	12,000	0.1	13,124	13,284	0.1	0.5
Long Beach Boulevard	North of Alondra Boulevard	20,440	20,400	0.0	23,296	23,256	0.0	0.6
	Alondra Boulevard to Artesia Boulevard	19,810	20,025	0.0	22,681	22,896	0.0	0.6
	Artesia Boulevard to Market Street	23,110	23,528	0.1	25,623	26,041	0.1	0.5
	Market Street to Del Amo Boulevard	21,670	21,800	0.0	24,202	24,332	0.0	0.5
	Del Amo Boulevard to San Antonia Drive	21,550	21,590	0.0	25,147	25,187	0.0	0.7
	Carson Street to Wardlow Road	25,160	25,292	0.0	28,947	29,079	0.0	0.6
	Wardlow Road to Spring Street	46,210	47,186	0.1	52,902	53,878	0.1	0.7
	Spring Street to Willow Street	44,340	44,340	0.0	51,246	51,246	0.0	0.6
	Willow Street to PCH	18,010	18,732	0.2	20,093	20,815	0.2	0.6
	PCH to Anaheim Street	14,890	15,020	0.0	17,022	17,152	0.0	0.6
	Anaheim Street to 7th Street	21,250	19,715	-0.3	23,169	21,634	-0.3	0.1
	7th Street to 6th Street	22,970	21,889	-0.2	24,725	23,644	-0.2	0.1
	6th Street to 3rd Street	9,720	9,860	0.1	10,586	10,726	0.1	0.4
	3rd Street to Broadway	7,910	8,396	0.3	8,562	9,048	0.2	0.6
Long Beach Boulevard	Broadway to Ocean Boulevard	7,060	6,804	-0.2	7,886	7,630	-0.1	0.3

Table M: Traffic Noise Levels Assessment for the Proposed Project

Street Name	Segment	Existing Conditions			Year 2040			
		Volume (ADT)		Change in Noise Level (dBA CNEL)	Volume (ADT)		Change in Noise Level (dBA CNEL)	Increase over Existing Conditions (dBA CNEL)
		No Project	With Project		No Project	With Project		
Atlantic Avenue	North of Alondra Boulevard	21,120	21,230	0.0	23,829	23,939	0.0	0.5
	Alondra Boulevard to Artesia Boulevard	25,990	26,080	0.0	29,658	29,748	0.0	0.6
	Artesia Boulevard to South Street	21,630	21,700	0.0	25,040	25,110	0.0	0.6
	South Street to Del Amo Boulevard	17,830	18,014	0.0	20,423	20,607	0.0	0.6
	Del Amo Boulevard to I-405	22,200	20,387	-0.4	25,712	23,899	-0.3	0.3
	I-405 to Willow Street	25,000	25,836	0.1	27,499	28,335	0.1	0.5
	Willow Street to PCH	16,480	16,475	0.0	18,378	18,373	0.0	0.5
	PCH to Anaheim Street	15,970	16,180	0.1	19,640	19,850	0.0	0.9
	Anaheim Street to 7th Street	13,740	13,160	-0.2	17,850	17,270	-0.1	1.0
	7th Street to 6th Street	14,450	14,400	0.0	16,145	16,095	0.0	0.5
	6th Street to 3rd Street	9,380	9,467	0.0	12,733	12,820	0.0	1.4
	3rd Street to Broadway	5,820	5,926	0.1	7,101	7,207	0.1	0.9
	Broadway to Ocean Boulevard	6,260	6,320	0.0	6,961	7,021	0.0	0.5
Orange Avenue	North of Wardlow Road	13,760	13,350	-0.1	16,112	15,702	-0.1	0.6
	Wardlow Road to PCH	13,610	13,596	0.0	15,631	15,617	0.0	0.6
	PCH to Anaheim Street	15,430	15,430	0.0	17,833	17,833	0.0	0.6
Alamitos Avenue	Anaheim Street to 7th Street	11,990	12,090	0.0	13,569	13,669	0.0	0.6
	7th Street to 6th Street	18,220	17,797	-0.1	20,247	19,824	-0.1	0.4
	6th Street to 3rd Street	16,140	15,927	-0.1	18,894	18,681	0.0	0.6
	3rd Street to Broadway	17,460	17,368	0.0	20,389	20,297	0.0	0.7
	Broadway to Ocean Boulevard	14,650	14,640	0.0	17,036	17,026	0.0	0.7
Cherry Avenue	North of Artesia Boulevard	22,030	21,766	-0.1	25,461	25,197	0.0	0.6
	Artesia Boulevard to Market Street	23,550	23,320	0.0	27,758	27,528	0.0	0.7
	Market Street to Del Amo Boulevard	25,490	25,490	0.0	29,460	29,460	0.0	0.6
	Del Amo Boulevard to Carson Street	31,340	30,910	-0.1	36,222	35,792	-0.1	0.6
	Carson Street to Wardlow Road	40,570	37,989	-0.3	46,173	43,592	-0.2	0.3
	Wardlow Road to Willow Street	36,570	33,722	-0.4	41,990	39,142	-0.3	0.3
	Willow Street to PCH	24,680	24,547	0.0	28,524	28,391	0.0	0.6
	PCH to 7th Street	12,450	12,520	0.0	14,170	14,240	0.0	0.6
	South of 7th Street	7,080	7,194	0.1	8,005	8,119	0.1	0.6

Table M: Traffic Noise Levels Assessment for the Proposed Project

Street Name	Segment	Existing Conditions			Year 2040			
		Volume (ADT)		Change in Noise Level (dBA CNEL)	Volume (ADT)		Change in Noise Level (dBA CNEL)	Increase over Existing Conditions (dBA CNEL)
		No Project	With Project		No Project	With Project		
Paramount Boulevard	North of Artesia Boulevard	19,830	19,601	-0.1	22,919	22,690	0.0	0.6
	Artesia Boulevard to South Street	18,950	18,960	0.0	21,771	21,781	0.0	0.6
	South Street to Del Amo Boulevard	19,070	19,300	0.1	22,025	22,255	0.0	0.7
	Del Amo Boulevard to Carson Street	19,520	19,540	0.0	22,410	22,430	0.0	0.6
Redondo Avenue	Spring Street to Willow Street	18,390	27,536	1.8	20,754	29,900	1.6	2.1
	Willow Street to PCH	24,120	24,916	0.1	27,393	28,189	0.1	0.7
	PCH to Anaheim Street	22,860	22,510	-0.1	25,941	25,591	-0.1	0.5
	Anaheim Street to 7th Street	22,900	22,731	0.0	26,467	26,298	0.0	0.6
	7th Street to 3rd Street	20,390	20,390	0.0	23,566	23,566	0.0	0.6
	3rd Street to Ocean Boulevard	13,120	12,228	-0.3	15,117	14,225	-0.3	0.4
Lakewood Boulevard	North of Del Amo Boulevard	27,340	27,370	0.0	31,304	31,334	0.0	0.6
	Del Amo Boulevard to Carson Street	27,480	26,942	-0.1	31,760	31,222	-0.1	0.6
	Carson Street to Spring Street	46,730	51,330	0.4	52,590	57,190	0.4	0.9
	Spring Street to Willow Street	37,450	38,570	0.1	43,167	44,287	0.1	0.7
Ximeno Avenue	PCH to 7th Street	19,650	19,700	0.0	22,599	22,649	0.0	0.6
	7th Street to 4th Street	9,160	9,255	0.0	10,256	10,351	0.0	0.5
	South of 4th Street	6,090	6,090	0.0	7,039	7,039	0.0	0.6
Park Avenue	7th Street to 4th Street	10,970	10,970	0.0	12,679	12,679	0.0	0.6
	South of 4th Street	5,750	5,750	0.0	6,646	6,646	0.0	0.6
Pacific Coast Highway	Ximeno Avenue to Anaheim Street	21,870	21,995	0.0	24,191	24,316	0.0	0.5
	Anaheim Street to 7th Street	29,970	30,049	0.0	32,799	32,878	0.0	0.4
	7th Street to Bellflower Boulevard	22,220	22,380	0.0	25,754	25,914	0.0	0.7
	Bellflower Boulevard to 2nd Street	33,390	33,320	0.0	38,084	38,014	0.0	0.6
Los Coyotes Diagonal	Studebaker Road to Spring Street	19,650	19,650	0.0	22,711	22,711	0.0	0.6
	Spring Street to Bellflower Boulevard	24,630	22,237	-0.4	28,466	26,073	-0.4	0.2
	South of Bellflower Boulevard	27,480	26,135	-0.2	31,278	29,933	-0.2	0.4

Table M: Traffic Noise Levels Assessment for the Proposed Project

Street Name	Segment	Existing Conditions			Year 2040			
		Volume (ADT)		Change in Noise Level (dBA CNEL)	Volume (ADT)		Change in Noise Level (dBA CNEL)	Increase over Existing Conditions (dBA CNEL)
		No Project	With Project		No Project	With Project		
Bellflower Boulevard	North of Del Amo Boulevard	18,400	18,400	0.0	21,266	21,266	0.0	0.6
	Del Amo Boulevard to Carson Street	21,270	20,552	-0.1	24,955	24,237	-0.1	0.6
	Carson Street to Spring Street	22,650	21,032	-0.3	26,178	24,560	-0.3	0.4
	Spring Street to Los Coyotes Diagonal	31,010	29,964	-0.1	33,983	32,937	-0.1	0.3
	Los Coyotes Diagonal to Atherton Street	36,160	35,029	-0.1	39,453	38,322	-0.1	0.3
	Atherton Street to PCH	26,570	26,570	0.0	30,709	30,709	0.0	0.6
Studebaker Road	Carson Street to Spring Street	17,680	17,680	0.0	20,434	20,434	0.0	0.6
	Spring Street to Willow Street	22,510	22,291	0.0	26,016	25,797	0.0	0.6
	Willow Street to 2nd Street	32,340	30,990	-0.2	38,727	37,377	-0.2	0.6
Norwalk Boulevard	North of Carson Street	16,480	16,480	0.0	19,047	19,047	0.0	0.6
	Carson Street to Cerritos Street	20,910	20,930	0.0	24,086	24,106	0.0	0.6
	Cerritos Street to Katella Avenue	27,160	27,440	0.0	31,434	31,714	0.0	0.7
	Katella Avenue to Westminster Road	35,900	35,900	0.0	41,492	41,492	0.0	0.6
Campus Drive	North of 7th Street	6,740	6,740	0.0	7,478	7,478	0.0	0.5
Alondra Boulevard	West of Long Beach Boulevard	17,310	17,260	0.0	19,426	19,376	0.0	0.5
	Long Beach Boulevard to Atlantic Avenue	23,520	23,430	0.0	26,418	26,328	0.0	0.5
	East of Atlantic Avenue	26,110	26,130	0.0	28,830	28,850	0.0	0.4
Artesia Boulevard	West of Long Beach Boulevard	21,480	20,953	-0.1	24,539	24,012	-0.1	0.5
	Long Beach Boulevard to Atlantic Avenue	22,160	22,140	0.0	25,462	25,442	0.0	0.6
	Atlantic Avenue to Cherry Avenue	21,020	20,840	0.0	24,484	24,304	0.0	0.6
	Cherry Avenue to Paramount Boulevard	20,390	20,240	0.0	22,901	22,751	0.0	0.5
South Street	Atlantic Avenue to Paramount Boulevard	21,160	21,160	0.0	24,456	24,456	0.0	0.6
	East of Paramount Boulevard	21,810	22,120	0.1	25,240	25,550	0.1	0.7
Market Street	Long Beach Boulevard to Cherry Avenue	13,520	13,460	0.0	15,787	15,727	0.0	0.7
	East of Cherry Avenue	16,200	16,030	0.0	19,102	18,932	0.0	0.7
Del Amo Boulevard	West of Long Beach Boulevard	26,440	26,253	0.0	30,410	30,223	0.0	0.6
	Long Beach Boulevard to Atlantic Avenue	29,460	29,634	0.0	33,667	33,841	0.0	0.6
	Atlantic Avenue to Cherry Avenue	26,810	26,810	0.0	30,986	30,986	0.0	0.6
	Cherry Avenue to Paramount Boulevard	26,860	26,430	-0.1	31,044	30,614	-0.1	0.6
	Paramount Boulevard to Bellflower Boulevard	28,720	28,780	0.0	32,770	32,830	0.0	0.6
	East of Bellflower Boulevard	30,840	30,840	0.0	35,644	35,644	0.0	0.6

Table M: Traffic Noise Levels Assessment for the Proposed Project

Street Name	Segment	Existing Conditions			Year 2040			
		Volume (ADT)		Change in Noise Level (dBA CNEL)	Volume (ADT)		Change in Noise Level (dBA CNEL)	Increase over Existing Conditions (dBA CNEL)
		No Project	With Project		No Project	With Project		
Carson Street	West of Cherry Avenue	21,190	21,256	0.0	24,241	24,307	0.0	0.6
	Cherry Avenue to Paramount Boulevard	29,660	29,660	0.0	34,280	34,280	0.0	0.6
	Paramount Boulevard to Lakewood Boulevard	30,930	30,900	0.0	35,761	35,731	0.0	0.6
	Lakewood Boulevard to Bellflower Boulevard	28,160	28,160	0.0	32,546	32,546	0.0	0.6
	Bellflower Boulevard to Los Coyotes Diagonal	30,060	29,549	-0.1	34,855	34,344	-0.1	0.6
	Los Coyotes Diagonal to I-605	40,090	32,162	-1.0	54,262	46,334	-0.7	0.6
	I-605 to Norwalk Boulevard	47,280	46,556	-0.1	54,644	53,920	-0.1	0.6
223rd Street	West of Wilmington Avenue	21,360	20,715	-0.1	24,687	24,042	-0.1	0.5
	Wilmington Avenue to Santa Fe Avenue	21,940	21,720	0.0	24,903	24,683	0.0	0.5
Wardlow Road	Santa Fe Avenue to Long Beach Boulevard	25,460	25,068	-0.1	29,426	29,034	-0.1	0.6
	Long Beach Boulevard to Orange Avenue	19,900	20,082	0.0	22,606	22,788	0.0	0.6
	Orange Avenue to Cherry Avenue	12,330	11,859	-0.2	14,251	13,780	-0.1	0.5
	Lakewood Boulevard to Palo Verde Avenue	18,450	18,450	0.0	21,324	21,324	0.0	0.6
	East of Palo Verde Avenue	20,980	20,980	0.0	24,248	24,248	0.0	0.6
Spring Street	Long Beach Boulevard to Redondo Avenue	38,020	39,201	0.1	42,436	43,617	0.1	0.6
	Redondo Avenue to Lakewood Boulevard	31,130	36,341	0.7	33,889	39,100	0.6	1.0
	Lakewood Boulevard to Bellflower Boulevard	27,850	27,341	-0.1	31,634	31,125	-0.1	0.5
	Bellflower Boulevard to Los Coyotes Diagonal	24,350	24,095	0.0	28,143	27,888	0.0	0.6
	Los Coyotes Diagonal to Studebaker Road	23,840	23,840	0.0	27,553	27,553	0.0	0.6
	Studebaker Road to Norwalk Boulevard	25,780	25,780	0.0	29,795	29,795	0.0	0.6
Sepulveda Boulevard	Wilmington Avenue to Terminal Island Freeway	20,250	19,850	-0.1	27,016	26,616	-0.1	1.2
Willow Street	Terminal Island Freeway to Santa Fe Avenue	20,530	19,990	-0.1	25,885	25,345	-0.1	0.9
	Santa Fe Avenue to Long Beach Boulevard	31,500	32,030	0.1	34,909	35,439	0.1	0.5
	Long Beach Boulevard to Atlantic Avenue	30,170	30,752	0.1	33,191	33,773	0.1	0.5
	Atlantic Avenue to Cherry Avenue	29,350	29,063	0.0	32,962	32,675	0.0	0.5
	Cherry Avenue to Redondo Avenue	32,900	33,456	0.1	37,701	38,257	0.1	0.7
	Redondo Avenue to Lakewood Boulevard	37,530	37,990	0.1	41,753	42,213	0.0	0.5

Table M: Traffic Noise Levels Assessment for the Proposed Project

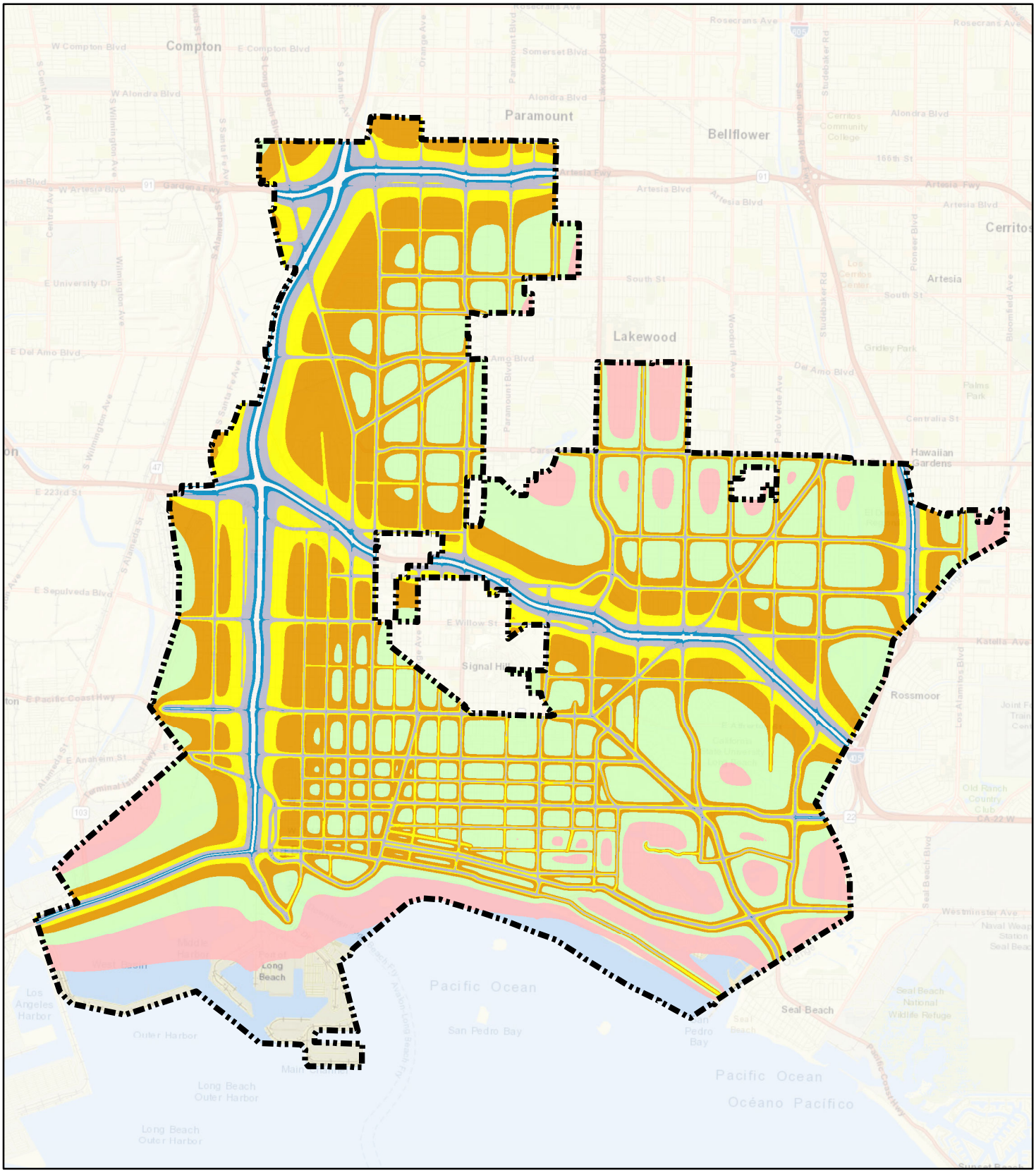
Street Name	Segment	Existing Conditions			Year 2040			
		Volume (ADT)		Change in Noise Level (dBA CNEL)	Volume (ADT)		Change in Noise Level (dBA CNEL)	Increase over Existing Conditions (dBA CNEL)
		No Project	With Project		No Project	With Project		
Pacific Coast Highway	Avalon Boulevard to Santa Fe Avenue	28,730	28,740	0.0	33,055	33,065	0.0	0.6
	Santa Fe Avenue to I-710	30,590	29,341	-0.2	36,043	34,794	-0.2	0.6
	I-710 to Pacific Avenue	29,280	28,171	-0.2	33,736	32,627	-0.1	0.5
	Pacific Avenue to Long Beach Boulevard	26,600	26,700	0.0	29,961	30,061	0.0	0.5
	Long Beach Boulevard to Atlantic Avenue	26,000	26,190	0.0	29,862	30,052	0.0	0.6
	Atlantic Avenue to Orange Avenue	26,840	27,714	0.1	30,089	30,963	0.1	0.6
	Orange Avenue to Cherry Avenue	30,130	30,200	0.0	34,604	34,674	0.0	0.6
	Cherry Avenue to Redondo Avenue	30,390	30,390	0.0	35,124	35,124	0.0	0.6
	Redondo Avenue to Ximeno Avenue	32,640	32,290	0.0	37,244	36,894	0.0	0.5
Anaheim Street	Avalon Boulevard to Santa Fe Avenue	20,520	20,650	0.0	23,724	23,854	0.0	0.7
	Santa Fe Avenue to Pacific Avenue	22,110	22,600	0.1	24,445	24,935	0.1	0.5
	Pacific Avenue to Long Beach Boulevard	23,470	23,450	0.0	25,844	25,824	0.0	0.4
	Long Beach Boulevard to Atlantic Avenue	24,180	24,020	0.0	27,258	27,098	0.0	0.5
	Atlantic Avenue to Alamitos Avenue	24,480	24,540	0.0	28,109	28,169	0.0	0.6
	Alamitos Avenue to Redondo Avenue	24,730	24,770	0.0	28,477	28,517	0.0	0.6
	Redondo Avenue to PCH	24,520	24,520	0.0	28,339	28,339	0.0	0.6
7th Street	West of Pacific Avenue	6,950	6,830	-0.1	7,559	7,439	-0.1	0.3
	Pacific Avenue to Long Beach Boulevard	17,050	16,960	0.0	17,470	17,380	0.0	0.1
	Long Beach Boulevard to Atlantic Avenue	17,310	17,473	0.0	17,814	17,977	0.0	0.2
	Atlantic Avenue to Alamitos Avenue	17,060	16,746	-0.1	18,860	18,546	-0.1	0.4
	Alamitos Avenue to Cherry Avenue	24,940	24,836	0.0	28,474	28,370	0.0	0.6
	Cherry Avenue to Redondo Avenue	25,580	25,580	0.0	29,564	29,564	0.0	0.6
	Redondo Avenue to Ximeno Avenue	27,900	27,985	0.0	32,161	32,246	0.0	0.6
	Ximeno Avenue to Park Avenue	30,100	30,087	0.0	34,742	34,729	0.0	0.6
	Park Avenue to PCH	34,330	34,400	0.0	39,590	39,660	0.0	0.6
	PCH to Bellflower Boulevard	39,530	38,522	-0.1	45,557	44,549	-0.1	0.5
	Bellflower Boulevard to Campus Drive	42,830	42,830	0.0	49,190	49,190	0.0	0.6
	Campus Drive to Studebaker Road	45,630	45,767	0.0	52,600	52,737	0.0	0.6

Table M: Traffic Noise Levels Assessment for the Proposed Project

Street Name	Segment	Existing Conditions			Year 2040			
		Volume (ADT)		Change in Noise Level (dBA CNEL)	Volume (ADT)		Change in Noise Level (dBA CNEL)	Increase over Existing Conditions (dBA CNEL)
		No Project	With Project		No Project	With Project		
6th Street	West of Pacific Avenue	16,120	16,120	0.0	19,208	19,208	0.0	0.8
	Pacific Avenue to Long Beach Boulevard	17,510	17,510	0.0	20,237	20,237	0.0	0.6
	Long Beach Boulevard to Atlantic Avenue	17,000	17,010	0.0	20,283	20,293	0.0	0.8
	Atlantic Avenue to Alamitos Avenue	16,520	16,520	0.0	19,093	19,093	0.0	0.6
3rd Street	West of Pacific Avenue	5,020	5,020	0.0	5,802	5,802	0.0	0.6
	Pacific Avenue to Long Beach Boulevard	5,300	5,340	0.0	5,991	6,031	0.0	0.6
	Long Beach Boulevard to Atlantic Avenue	4,950	4,950	0.0	5,721	5,721	0.0	0.6
	Atlantic Avenue to Alamitos Avenue	4,060	4,015	0.0	4,919	4,874	0.0	0.8
	Alamitos Avenue to Redondo Avenue	5,850	5,735	-0.1	6,876	6,761	-0.1	0.6
Broadway	West of Pacific Avenue	9,410	9,400	0.0	10,805	10,795	0.0	0.6
	Pacific Avenue to Long Beach Boulevard	12,730	12,720	0.0	14,813	14,803	0.0	0.7
	Long Beach Boulevard to Atlantic Avenue	12,560	12,560	0.0	14,239	14,239	0.0	0.5
	Atlantic Avenue to Alamitos Avenue	13,040	13,040	0.0	15,071	15,071	0.0	0.6
Ocean Boulevard	West of Magnolia Avenue	30,620	30,520	0.0	34,828	34,728	0.0	0.5
	Magnolia Avenue to Pacific Avenue	58,900	59,240	0.0	60,955	61,295	0.0	0.2
	Pacific Avenue to Long Beach Boulevard	57,010	57,310	0.0	59,213	59,513	0.0	0.2
	Long Beach Boulevard to Atlantic Avenue	29,270	28,744	-0.1	31,916	31,390	-0.1	0.3
	Atlantic Avenue to Alamitos Avenue	27,840	27,880	0.0	29,750	29,790	0.0	0.3
	Alamitos Avenue to Redondo Avenue	29,400	29,363	0.0	31,949	31,912	0.0	0.4
Livingston Drive	Redondo Avenue to 2nd Street	25,260	22,735	-0.5	28,400	25,875	-0.4	0.1
	2nd Street to PCH	38,370	38,520	0.0	44,227	44,377	0.0	0.6
2nd Street	PCH to Studebaker Road	40,090	32,162	-1.0	54,262	46,334	-0.7	0.6
	Studebaker Road to Seal Beach Boulevard	29,770	20,493	-1.6	43,684	34,407	-1.0	0.6

Source: LSA (2019)
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
I = Interstate
PCH = Pacific Coast Highway

This page intentionally left blank



LSA

LEGEND

Long Beach City Boundary

Future 2040 Traffic Noise Contours

55 dBA Ldn

60 dBA Ldn

65 dBA Ldn

70 dBA Ldn

75 dBA Ldn

80 dBA Ldn

85 dBA Ldn

0 0.75 1.5
MILES

SOURCE: Esri (2016); LSA (2/2019)

I:\RDG1701\GIS\FutureTrafficNoiseContours_Regional.mxd (2/27/2019)

FIGURE 5

Long Beach General Plan

Land Use and Urban Design Elements

Future 2040 Traffic Noise Contours

This page intentionally left blank

Substantial Temporary Increase in Ambient Noise Levels

Construction associated with implementation of the LUE/UDE would occur over a period of approximately 21 years. Construction activities associated with development allowed under the LUE/UDE could result in substantial temporary or periodic increases in ambient noise levels at development sites throughout the City.

Two types of short-term noise impacts would occur during demolition, site preparation, and construction of projects that would be anticipated by the proposed plan. The first type would result from the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The transport of workers, construction equipment, and materials to the project site would incrementally increase noise levels on access roads leading to the site. The second type would result from equipment use and activities associated with demolition, site preparation, and construction of proposed projects. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These phases would change the character of the noise generated on project sites and, therefore, the noise levels surrounding the sites as construction progresses.

Table N lists typical maximum noise levels for various pieces of construction equipment, as measured at a distance of 50 ft from the operating equipment. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. The site preparation phase, which includes excavation and grading, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as pile driving, backhoes, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings. Typical maximum noise levels during the site preparation phase of construction can range up to 86 dBA L_{max} at 50 ft from multiple pieces of operating equipment.

Construction anticipated under the LUE is expected to require the use of earthmoving equipment, dozers, and water and pickup trucks. Besides pile driving, which is not common on most construction sites, a scraper is one of the loudest pieces of construction equipment. The estimated noise level generated by each scraper on future project sites would be approximately 84 dBA L_{max} at 50 ft from the scraper. Each dozer, another common piece of construction equipment, would generate approximately 82 dBA L_{max} at 50 ft. The estimated noise level generated by water and pickup trucks would be approximately 75 dBA L_{max} at 50 ft from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of future construction would be 86 dBA L_{max} at a distance of 50 ft from the active construction area. In addition, some construction projects could require pile driving, which would have an estimated noise level of approximately 101 dBA L_{max} at 50 ft.

Table N: Noise Emission Reference Levels and Usage Factors

Equipment Description	Acoustical Usage Factor[1]	Predicted L_{max} at 50 feet (dBA, slow)[2]	Actual Measured L_{max} at 50 feet (dBA, slow)[3]
All Other Equipment > 5 HP	50	85	N/A[4]
Backhoe	40	80	78
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74
Front-End Loader	40	80	79
Generator	50	82	81
Gradall	40	85	83
Grader	40	85	N/A
Impact Pile Driver	20	95	101
Man Lift	20	85	75
Paver	50	85	77
Pickup Truck	40	55	75
Roller	20	85	80
Scraper	40	85	84
Tractor	40	84	N/A

Source: Federal Highway Administration (FHWA). *Construction Noise Handbook*, Table 9.1 (August 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.

[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

[2] Maximum noise levels were developed based on Specification (Spec.) 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

[3] The maximum noise level was developed based on the average noise level measured for each piece of equipment during the CA/T program in Boston, Massachusetts.

[4] Since the maximum noise level based on the average noise level measured for this piece of equipment was not available, the maximum noise level developed based on Spec 721.560 would be used.

dBA = A-weighted decibel
L_{max} = maximum instantaneous noise level
N/A = not applicable

Noise-sensitive receptors include residences, schools, hospitals, churches, and similar uses that are sensitive to noise. Construction and operation of development allowed under the LUE/UDE could adversely affect nearby noise-sensitive land uses. Construction noise is permitted by the Municipal Code when activities occur between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction would be permitted on Sundays. Construction noise impacts are currently exempt from specific noise levels limits.

Construction activities associated with development allowed under the LUE/UDE would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced. Specific construction project data that may occur with implementation of the LUE/UDE, including location and noise levels at surrounding sensitive receptors, are unknown at this time. Some projects may have unusual or extremely loud construction activities (such as pile driving, nighttime construction work, and unusually long construction duration, etc.). Therefore, construction projects may result in a substantial increase in ambient noise levels, and mitigation would be required. Mitigation Measure MM NOI-1 would require future construction projects

implemented under the LUE/UDE to implement construction best management practices to reduce potential construction-period noise impacts for nearby sensitive receptors. Although Mitigation Measure MM NOI-1 would reduce construction noise associated with future projects, since the location, proximity to sensitive receptors, and type of construction equipment associated with new construction projects are unknown at this time, in an abundance of caution this impact is considered significant and unavoidable.

Airport Noise

As noted in the existing conditions discussion above, aircraft noise in the City of Long Beach is primarily related to aircraft operations at Long Beach Airport, Los Angeles International Airport, and John Wayne Airport. Long Beach Airport is located centrally within the City, approximately 3 miles northeast of downtown. As stated in Section 16.43.050 of the Municipal Code, it is the goal of the City that incompatible property in the vicinity of the Airport shall not be exposed to noise above 65 dBA CNEL. The LUE/UDE includes the following policies and land use strategies to encourage land use compatibility: LU Policy 9-1, LU Policy 16-6, LU Policy 16-8, LU Policy 16-9, Policy UD 14-2, Policy UD 14-4, Policy UD 14-5, Policy UD 23-1, Policy UD 24-3, Policy UD 24-5, and Policy UD 26-2 (refer to Subsection 4.5.7.1). Therefore, implementation of the LUE and UDE would locate business parks and airport-related land uses surrounding the airport and would not introduce any new noise-sensitive receptors within the 65 dBA noise contour. Therefore, the LUE/UDE would not result in the exposure of sensitive receptors to excessive noise levels from aircraft noise sources.

Cumulative Impacts

Cumulative growth within the City could result in temporary or periodic increases in ambient noise levels at development sites throughout the City. However, construction-related noise would be temporary and would no longer occur once construction of individual projects is completed. In addition, construction activities associated with development allowed under the proposed project would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced. In addition, with implementation of Mitigation Measure MM NOI-1, individual projects would be required to implement construction best management practices to reduce potential construction-period noise impacts for nearby sensitive receptors. Therefore, even with implementation of Mitigation Measure MM NOI-1 construction activities would be considered to have a cumulatively considerable contribution to the total noise environment in the City.

The proposed project would not create a cumulatively considerable contribution to regional noise conditions. For traffic noise to increase by 3 dBA, traffic volumes would have to double. Implementation of the proposed project would not result in a doubling of average daily trips, and therefore, implementation of the LUE/UDE would not result in a 3 dBA increase in traffic noise level in the City and would not generate a significant impact under cumulative noise conditions.

Additionally, as shown in the traffic noise impact discussion above, implementation of the LUE/UDE policies and land use strategies would require the City to consider noise and land use compatibility issues when evaluating individual development proposals. As described above, implementation of the proposed project would not result in a substantial cumulative increase in long-term noise.

Noise Mitigation Measures

The proposed project could result in a substantial temporary increase in noise and vibration due to construction activities, and mitigation would be required.

MM NOI-1 Project contractors shall implement the following construction best management practices during construction activities:

- Schedule high-noise and vibration-producing activities to a shorter window of time during the day outside early morning hours to minimize disruption to sensitive uses.
- Grading and construction contractors shall use equipment that generates lower noise and vibration levels, such as rubber-tired equipment rather than metal-tracked equipment.
- Construction haul trucks and materials delivery traffic shall avoid residential areas whenever feasible.
- The construction contractor shall place noise- and vibration-generating construction equipment and locate construction staging areas away from sensitive uses whenever feasible.
- Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all project construction.
- Prohibit extended idling time of internal combustion engines.
- Ensure that all general construction-related activities are restricted to 7:00 a.m. and 7:00 p.m. on weekdays and federal holidays, and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction would be permitted on Sundays. Construction activities occurring outside of these hours may be permitted with authorization by the Building Official and/or a permit issued by the Noise Control Officer.
- All residential units located within 500 feet of a construction site shall be sent a notice regarding the construction schedule. A sign legible at a distance of 50 feet shall also be posted at the construction site. All notices and the signs shall indicate the dates and durations of construction activities, as well as provide a telephone number for a “noise disturbance coordinator.”
- A “noise disturbance coordinator” shall be established. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early or bad muffler, etc.) and shall be required to implement reasonable measures to reduce noise levels.
- For all projects determined to have unusual or extremely loud construction activities (e.g., pile driving, nighttime construction work, or unusually long construction duration, etc.) that would generate noise levels over 90 dBA L_{eq} at

nearby sensitive receptors, temporary noise control blanket barriers shall be installed in a manner to shield sensitive receptors land uses.

Level of Significance After Mitigation

Potential impacts related to construction noise associated with future development projects that would be implemented as part of the LUE/UDE would be reduced with implementation of Mitigation Measure MM NOI-1. However, since the location, proximity to sensitive receptors, and type of construction equipment associated with new construction projects are unknown at this time, in an abundance of caution this impact is considered significant and unavoidable.

Potential impacts related to the construction vibration associated with future development projects that would be implemented as part of the LUE/UDE would be reduced with implementation of Mitigation Measure MM NOI-1. Therefore, the proposed project would not generate excessive ground-borne vibration or ground-borne noise levels.

REFERENCES

City of Long Beach. 1975. *Long Beach General Plan*. March.

City of Long Beach. 2019. *Municipal Code*. February.

Federal Highway Administration (FHWA). 2006. *Construction Noise Handbook*, Table 9.1. August.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*. September.

Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control*.

Noise Free America. *Citizens for a Quieter Sacramento Rebuttal to the CLCA Position on Leaf Blowers*. Website: https://noisefree.org/sources-of-noise/lawn-and-garden-equipment/ (accessed March 2019).

State of California Governor's Office of Planning and Research, 2017. *State of California General Plan Guidelines*. Appendix D: Noise Element Guidelines. July.

U.S. Environmental Protection Agency (USEPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March.

APPENDIX A

NOISE MONITORING DATA

This page intentionally left blank

Olive Ave
N Lime Ave
Lime Ave
Eastondale Ave
E Penfold St
Millmark Ave
E 68th St
N Atlantic Pl
ST1
S Atlantic Ave
Atlantic Ave
Los Angeles River Bicycle Path

Noise Measurement Survey

Project Number: CLB
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST 1 Date: 2/11/16

Time: From 7:27A To 7:42A

Site Location: 6857-6909 ATLANTIC AVE.

Primary Noise Sources: TRAFFIC ON ATLANTIC, FAINT TRAFFIC ON I-710
TRUCKS W/ TRAILERS TURNING IN NEARBY LOT

Comments: DATA FILE 226
PAUSED OUT PEDESTRIAN PASSBY TALKING LOUDLY

Adjacent Roadways: ATLANTIC

File:	
L_{eq}	66.6
L_{max}	82.1
L_{min}	59.6
L_2	71.7
L_8	69.2
L_{25}	67.2
L_{50}	65.2
L_{90}	62.0
L_{99}	60.6

Atmospheric Conditions	
Average Wind Velocity (mph)	0.0
Maximum Wind Velocity (mph)	0.8
Temperature (F)	63.2
Relative Humidity (%)	38.8

E Hullett St
E South St
ST2
CONSTRUCTION NOISE
MOVED TO FAR SIDE OF CHURCH
Obispo Ave
E 57th St
N Orizaba Ave

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST 2 Date: 2/11/16

Time: From 7:58A To 8:13A

Site Location: 3114 SOUTH STREET - CHURCH OF LATTER DAY SAINTS

Primary Noise Sources: TRAFFIC ON SOUTH STREET, BIRDS

Comments: DATA FILE 227

Adjacent Roadways: SOUTH ST. / OBISPO AVE

File:	
L_{eq}	70.3
L_{max}	80.8
L_{min}	53.6
L_2	75.5
L_8	74.2
L_{25}	71.7
L_{50}	69.1
L_{90}	62.1
L_{99}	55.2

Atmospheric Conditions	
Average Wind Velocity (mph)	0.0
Maximum Wind Velocity (mph)	0.0
Temperature (F)	69.4
Relative Humidity (%)	38.4

Long Beach
E Spring St
Elm Ave
ST3
St
Locust Ave

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST-3 Date: 2/11/16

Time: From 8:58A To 9:13A

Site Location: 3115 LONG BEACH BLVD.

Primary Noise Sources: TRAFFIC ON LONG BEACH BLVD, BACK UP BEEPER ACROSS L.B. BLVD, BIRDS

Comments: DATA FILE 229
AIRPLANE - 15 SECONDS - 70 LEQ

Adjacent Roadways: LONG BEACH BLVD,

File:	
L_{eq}	63.6
L_{max}	73.6
L_{min}	49.2
L_2	68.8
L_8	67.3
L_{25}	65.2
L_{50}	62.4
L_{90}	54.5
L_{99}	50.6

Atmospheric Conditions	
Average Wind Velocity (mph)	1.6
Maximum Wind Velocity (mph)	3.4
Temperature (F)	68.6
Relative Humidity (%)	29.6

Long Beach Blvd
E 20th St
E Rhea St
ST4
E 19th St
E Dayman St

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST 4 Date: 2/11/16

Time: From 9:35A To 9:50A

Site Location: 1940 LONG BEACH BLVD

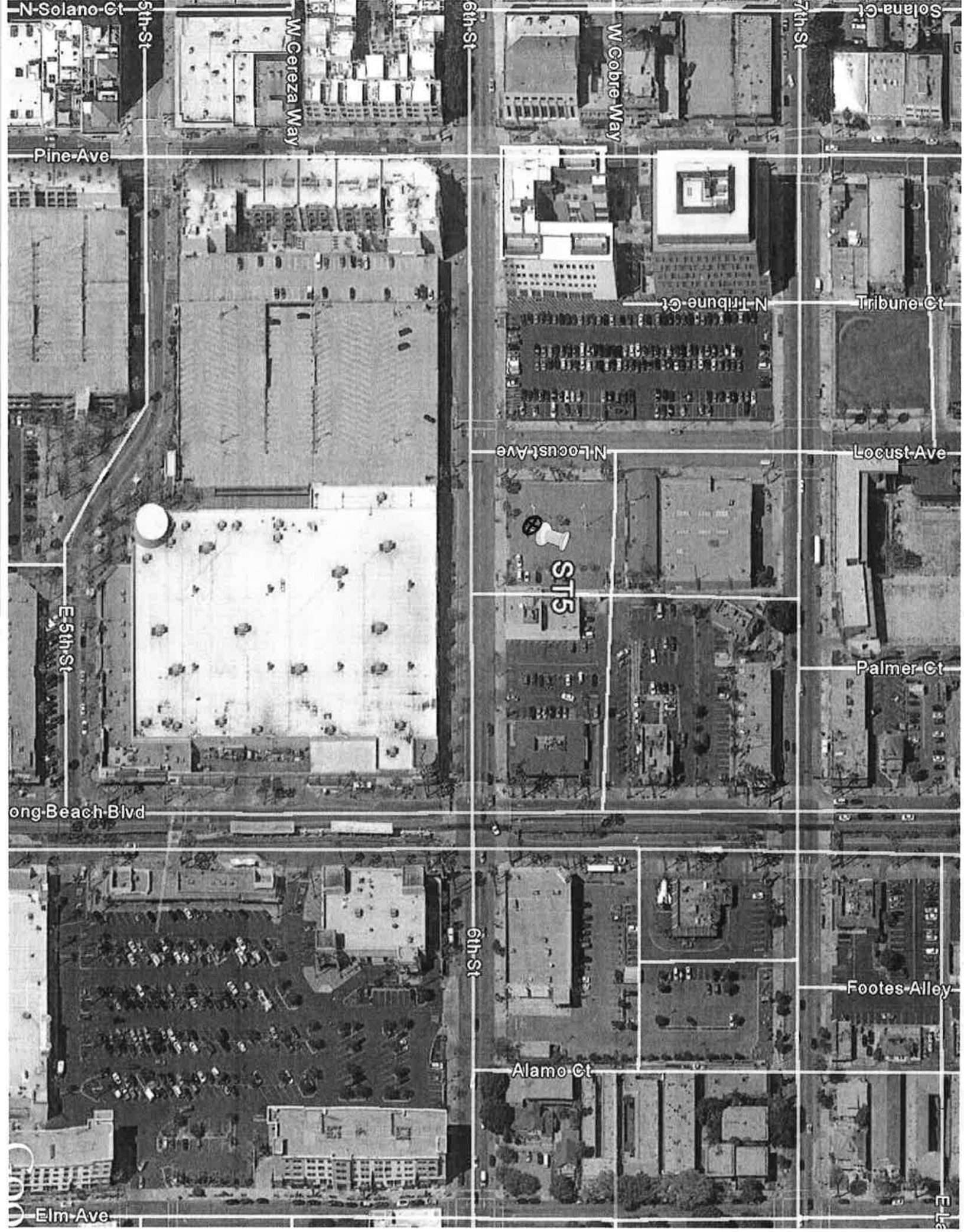
Primary Noise Sources: TRAFFIC ON LONG BEACH BLVD, BIRDS, DISTANT MUSIC

Comments: DATA FILE 230
PAUSED OUT PEDESTRIAN PASSBYS
TRAIN ON LB BLVD - 5 SECONDS 68 LEQ / 3 SECONDS 70 LEQ

Adjacent Roadways: LONG BEACH BLVD / RHEA ST.

File:	
L_{eq}	65.7
L_{max}	80.9
L_{min}	45.0
L_2	72.5
L_8	69.8
L_{25}	67.0
L_{50}	61.7
L_{90}	49.8
L_{99}	46.3

Atmospheric Conditions	
Average Wind Velocity (mph)	0.0
Maximum Wind Velocity (mph)	0.0
Temperature (F)	80.9
Relative Humidity (%)	22.3


N Solano Ct
5th St
W Cereza Way
6th St
W Cobre Way
7th St
Solana Ct
Pine Ave
N Tribune Ct
Tribune Ct
N Locust Ave
Locust Ave
ST5
E 5th St
Palmer Ct
ong Beach Blvd
6th St
Footes Alley
Alamo Ct
Elm Ave

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST-5 Date: 2/11/16

Time: From 10:13A To 10:28A

Site Location: 614 LOCUST AVE IN PARKING LOT ADJACENT TO 6TH STREET.

Primary Noise Sources: TRAFFIC ON 6TH STREET, BIRDS

Comments: DATA FILE 231
PAUSED OUT SIRENS, PEDESTRIANS

Adjacent Roadways: 6TH STREET, LOCUST AVE

File:	
L_{eq}	63.3
L_{max}	77.3
L_{min}	47.7
L_2	71.6
L_8	68.0
L_{25}	64.1
L_{50}	58.1
L_{90}	50.6
L_{99}	48.9

Atmospheric Conditions	
Average Wind Velocity (mph)	2.3
Maximum Wind Velocity (mph)	3.5
Temperature (F)	75.7
Relative Humidity (%)	27.1

6th St
MOVED TO NEXT BLOCK
ST6
E 5th
E 4th St
Coronado Ave
Redondo Ave
Newport Ave
Loma Ave
2010
Goo

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST-6 Date: 2/11/16

Time: From 10:51A To 11:11A

Site Location: 600 REDONDO AVENUE IN PARKING LOT

Primary Noise Sources: TRAFFIC ON REDONDO AVE
CAR W/ LOUD MUSIC PASSBY

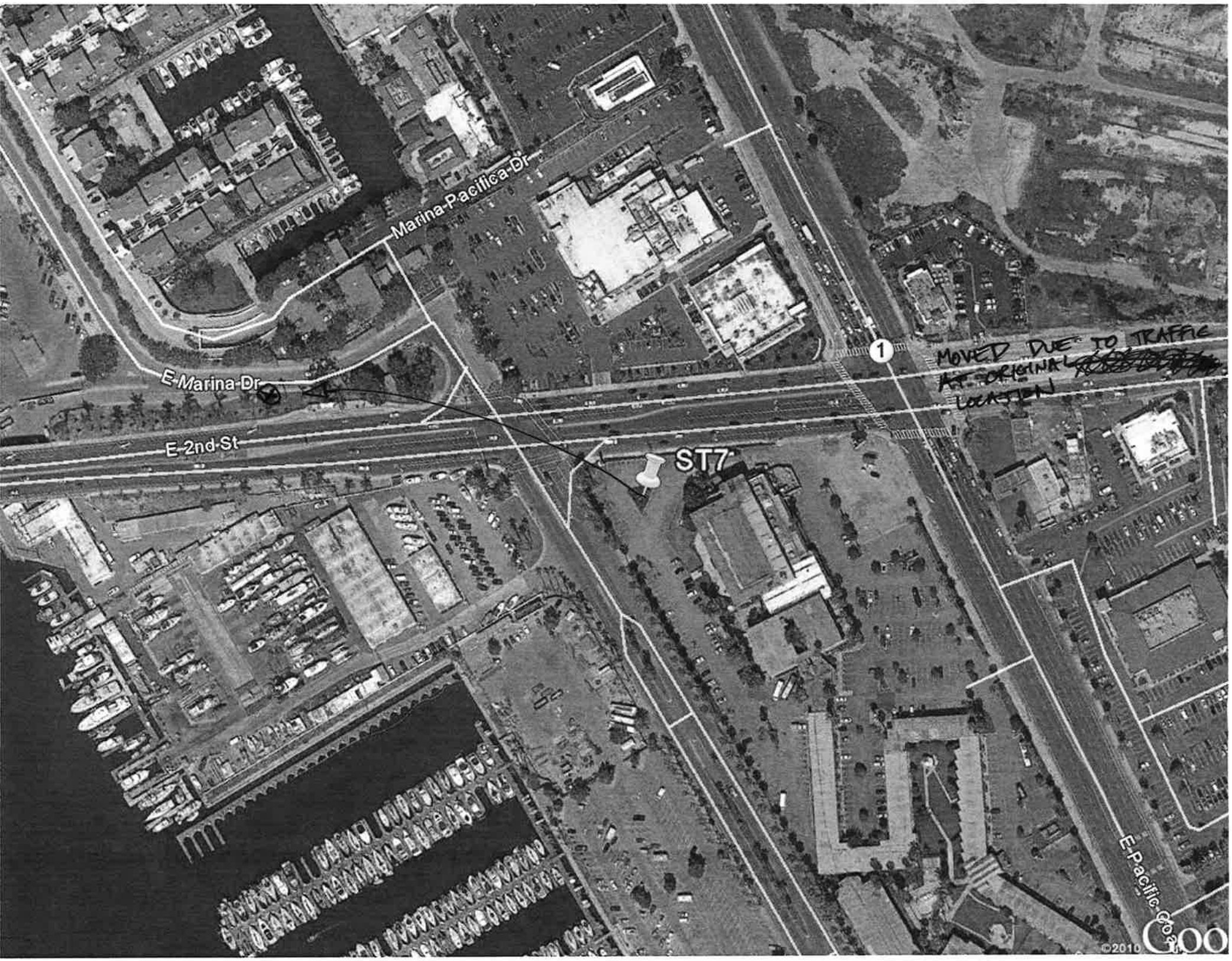
Comments: DATA FILE 232
AIRPLANE 27 SECONDS - 62 LEQ / 15 SECONDS - 68 LEQ / 30 SECONDS - 72 LEQ
PAUSED OUT CAR IN PARKING LOT PAST METER
MOTORCYCLE - 70 LEQ - 2 SECONDS / 2 SECONDS 63 LEQ / 4 SECONDS - 68 LEQ
HELICOPTER - 22 SECONDS - 77 LEQ

Adjacent Roadways: REDONDO AVE / 6TH STREET
27" HIGH BLOCK WALL ON A PORTION OF PARKING LOT ADJACENT TO REDONDO AVE.

File:	
L_{eq}	64.0
L_{max}	81.5
L_{min}	45.5
L_2	72.5
L_8	67.3
L_{25}	63.9
L_{50}	60.3
L_{90}	51.8
L_{99}	47.3

Atmospheric Conditions	
Average Wind Velocity (mph)	1.5
Maximum Wind Velocity (mph)	2.3
Temperature (F)	78.5
Relative Humidity (%)	29.8

*RAN MEASUREMENT 5 MIN LONGER TO BALANCE PAUSES
- 20 MINUTE MEASUREMENT


Marina Pacifica Dr
E Marina Dr
E 2nd St
ST7
1
MOVED DUE TO TRAFFIC
AT ORIGINAL
LOCATION
E Pacific Coa
©2010 Google

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST-7 Date: 2/11/16

Time: From 2:11 P To 2:26

Site Location: 5800-6462 E. MARINA DR. ADJACENT TO 2ND STREET, NEAR BUS STOP

Primary Noise Sources: TRAFFIC ON 2ND STREET, BIRDS

Comments: DATA FILE 235
PAUSED OUT CARS ON MARINA ~~DRIV~~ DRIVE
2ND STREET LEVEL IS ~ 10 FT HIGHER THAN MEASUREMENT LOCATION LEVEL

Adjacent Roadways: 2ND STREET / MARINA ~~DRIV~~ DRIVE

File:	
L_{eq}	62.3
L_{max}	81.5
L_{min}	49.0
L_2	68.0
L_8	65.4
L_{25}	63.3
L_{50}	60.0
L_{90}	53.5
L_{99}	50.7

Atmospheric Conditions	
Average Wind Velocity (mph)	1.0
Maximum Wind Velocity (mph)	1.3
Temperature (F)	81.0
Relative Humidity (%)	27.9

Merriam Way
Beach Dr
Earl Warren Dr
Pine Rd
ST8
Sam Johnson Rd
N Bellflower Blvd
Los Altos Ave
E Lonna Linda Dr
N Bryant Rd
E Las Lomas St
E El Jardin St
E La Pasada St
naheim Rd

Noise Measurement Survey

Project Number: _____ Test Personnel: L. FREEBERG
Project Name: LB GENERAL PLAN Equipment: LD 831

Site Number: ST-8 Date: 2/11/16 Time: From 1:15P To 1:30P

Site Location: CAL STATE UNIVERSITY LONG BEACH NEAR BELLFLOWER BLVD AND BEACH DRIVE

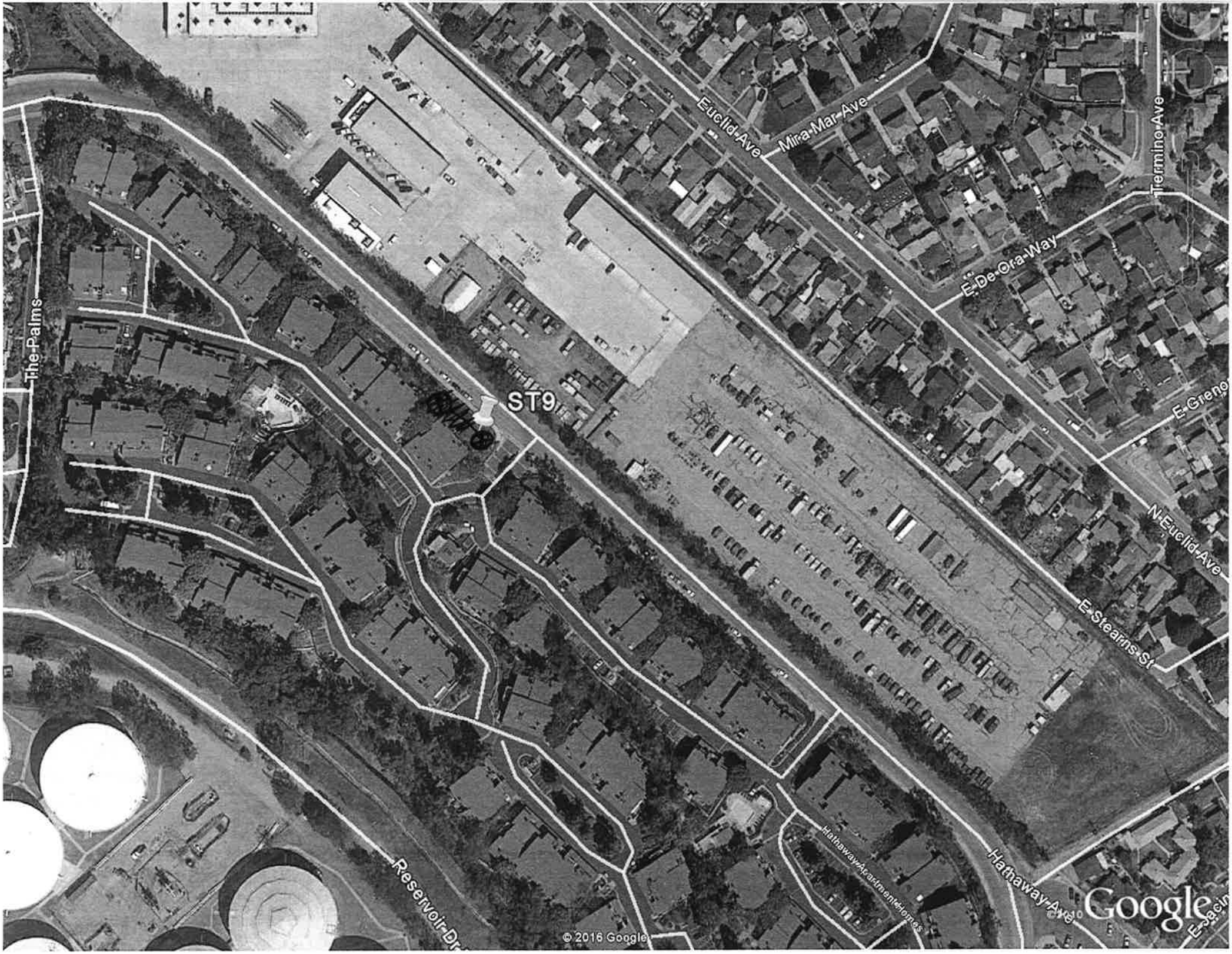
Primary Noise Sources: TRAFFIC ON BELLFLOWER BLVD, BIRDS MUSIC IN CAR / HORN

Comments: DATA FILE 234
AIRPLANE - 7 SECONDS - 63 DB / 23 SECONDS - 62 DB /

Adjacent Roadways: BELLFLOWER BLVD / BEACH DRIVE

File:	
L_{eq}	66.0
L_{max}	74.8
L_{min}	49.3
L_2	71.5
L_8	69.8
L_{25}	67.5
L_{50}	64.6
L_{90}	57.8
L_{99}	49.3

Atmospheric Conditions	
Average Wind Velocity (mph)	1.8
Maximum Wind Velocity (mph)	4.1
Temperature (F)	81.3
Relative Humidity (%)	33.3


ST9
Euclid Ave
Mira Mar Ave
Termino Ave
E De Ora Way
E Stearns St
N Euclid Ave
The Palms
Reservoir Dr
Hathaway Ave
Hathaway Apartment Homes
© 2016 Google
Google

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST-9 Date: 2/11/16

Time: From 11:42 A To 11:57 A

Site Location: 3500 HATHAWAY AVE APARTMENT COMPLEX OPEN GRASS AREA

Primary Noise Sources: TRAFFIC ON HATHAWAY AVE, DISTANT MUSIC IN APARTMENT

Comments: DATA FILE 233
AIRPLANE - 35 SECONDS - 54 DB / 8 SECONDS - 58 DB / 12 SECONDS - 59 DB
- 17 SECONDS - 56 DB / 15 SECONDS - 55 DB
PAUSED OUT SIREN

Adjacent Roadways: HATHAWAY AVE

File:	
L_{eq}	62.0
L_{max}	75.0
L_{min}	42.4
L_2	69.9
L_8	67.5
L_{25}	62.6
L_{50}	55.6
L_{90}	46.4
L_{99}	43.6

Atmospheric Conditions	
Average Wind Velocity (mph)	1.0
Maximum Wind Velocity (mph)	3.7
Temperature (F)	85.1
Relative Humidity (%)	27.5

* LOCATION ~ 10 FT ABOVE ROAD LEVEL ON BERM OF APARTMENT LEVEL.

St Louis Ave
E 32nd St
Cherry Ave
ST10
405

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST10 Date: 2/11/16

Time: From 8:31A To 8:46A

Site Location: 3245 CHERRY AVE IN PARKING AREA

Primary Noise Sources: TRAFFIC ON CHERRY AVE

Comments: DATA FILE 228
AIRPLANE - 5 SECONDS - 82 LEQ
HELICOPTER - 8 SECONDS - 74 LEQ | 5 SECONDS - 76 LEQ
MOTORCYCLE - 2 SECONDS - 96 LEQ

Adjacent Roadways: CHERRY AVE / 32ND ST

File:	
L_{eq}	76.2
L_{max}	99.3
L_{min}	61.3
L_2	80.7
L_8	78.5
L_{25}	76.7
L_{50}	73.9
L_{90}	67.7
L_{99}	63.0

Atmospheric Conditions	
Average Wind Velocity (mph)	0.9
Maximum Wind Velocity (mph)	1.2
Temperature (F)	67.1
Relative Humidity (%)	35.1

ST11
6800 E Wardlow Rd
E Coralite St
E Premium St
Petaluma Ave
Studebaker Rd
Lees Ave
Kallin Ave
Roxanne Ave

Noise Measurement Survey

Project Number: _____
Project Name: LB GENERAL PLAN

Test Personnel: L. FREEBERG
Equipment: LD 831

Site Number: ST-11 Date: 2/11/16

Time: From 2:47P To 3:02P

Site Location: 3401 STUDEBAKER ROAD IN PARKING LOT ADJACENT TO WARDLOW ROAD

Primary Noise Sources: TRAFFIC ON WARDLOW ROAD, WIND GUSTS TO 7.5MPH

Comments: DATA FILE 236

Adjacent Roadways: WARDLOW ROAD / PETALUMA AVE

File:	
L_{eq}	62.5
L_{max}	79.2
L_{min}	46.9
L_2	69.8
L_8	67.0
L_{25}	63.0
L_{50}	58.5
L_{90}	52.0
L_{99}	48.1

Atmospheric Conditions	
Average Wind Velocity (mph)	3.1
Maximum Wind Velocity (mph)	4.9
Temperature (F)	83.6
Relative Humidity (%)	17.1

APPENDIX E:

DATA METHODOLOGY MEMO

This page intentionally left blank

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: January 2, 2019

TO: Christopher Koontz, City of Long Beach

FROM: Ashley Davis and Arthur Black, LSA

SUBJECT: Methodology for Calculating Growth in Socioeconomic Data Associated with the Long Beach General Plan Land Use Element

Travel demand generated by demographic elements of a city such as population, housing units, and employment have an effect on mobility, air quality, and other aspects of the environment. The Long Beach General Plan Land Use Element affects the distribution of the future quantity of these elements throughout Long Beach. This memorandum describes how the quantity of future growth in demographic data was calculated and how this growth was distributed throughout the land uses and neighborhoods of Long Beach.

Quantity of Growth

Although the City of Long Beach (City) provides some input data for the demographic projection process, ultimately the City's plans must accommodate demographic projections provided by State and regional planning agencies. The California State Department of Finance and California Employment Development Department prepare projections of population and employment growth for the State and its regions. For the Southern California region, the Metropolitan Planning Organization (MPO) is the Southern California Association of Governments (SCAG). SCAG uses the data provided by the State and projects population and employment growth for subregions and jurisdictions as part of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) process. For the 2016 RTP/SCS, SCAG forecasts a population growth of 18,230 new residents and employment growth of 28,511 new jobs in Long Beach by 2040.

Projecting housing needs follows a similar process, whereby the State (i.e., the Department of Housing and Community Development) provides regional housing projections to the region (i.e., SCAG), which in turn projects housing growth for local jurisdictions. Unlike other data projections, rather than being simply informative, the housing allocation provided to jurisdictions through the Regional Housing Needs Assessment (RHNA) process is enforceable through the Housing Accountability Act. As an outcome of the most recent RHNA process, the City is required to plan for 7,048 new dwelling units to accommodate future population growth. However, due to insufficient construction of new housing units in the past (within Long Beach and the region), Long Beach has many residential areas where housing units are overcrowded. The City has engaged in an Assessment of Fair Housing with the United States Department of Housing and Urban Development.

As an outcome of this assessment, it was determined that the City has anticipated housing needs for 21,476 housing units to address existing housing needs. In total, Long Beach requires 28,524 housing units to address future (7,048) and existing (21,476) housing needs. It is this number of units, which

complies with both the State and federal assessments, that must be accommodated in City planning documents.

As a result of the processes described above, the following quantities of demographic data growth are anticipated in the proposed Land Use Element:

- **Population:** 18,230 new residents, for a total of 484,485 by 2040
- **Housing:** 28,524 new dwelling units, for a total of 192,318 by 2040
- **Employment:** 28,511 new jobs anticipated, for a total of 181,665 by 2040

Distribution of Growth

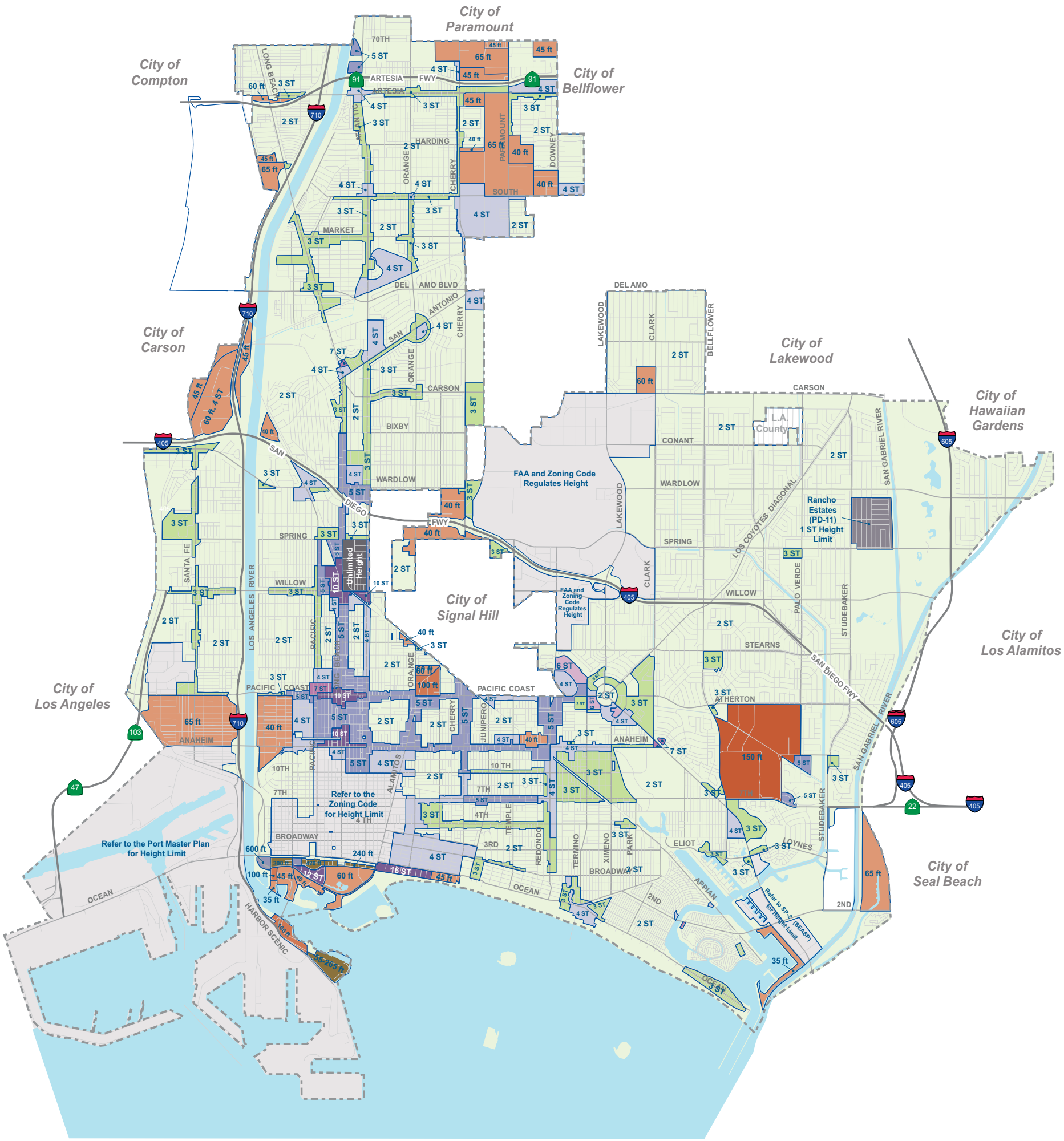
Current trends related to overcrowding indicate that population growth is likely to occur whether or not it is planned for in Long Beach. However, land use designations outlined in the General Plan Land Use Element have some effect on the location of housing and places of employment. To assess the effect of the proposed Land Use Element, the citywide quantity of new demographic data described above further needs to be distributed across the city.

In a departure from the existing Land Use Element, which segregates property with traditional single-use land use designations, the updated Land Use Element establishes 14 PlaceTypes that would divide Long Beach into district neighborhoods, each with their own sense of character and place. PlaceTypes would allow for a combination of land uses at varying densities and intensities to allow for greater flexibility and a mix of compatible land uses within these areas. Figure 1 displays the proposed locations of PlaceTypes.

Under the proposed Land Use Element, approximately 13 percent of the city is proposed to result in concentrated land use changes as compared to existing conditions. These areas are referred to "Major Areas of Change" throughout the proposed Land Use Element. The Major Areas of Change signify areas where demographic growth is anticipated to be most profound; however, areas that are not designated as "Major Areas of Change" and/or are not anticipated to result in changes in existing land use patterns may also experience demographic growth. Figure 2 displays the Major Areas of Change.

Existing Land Uses

Existing land use patterns were considered when determining how future demographic growth was likely to be distributed throughout Long Beach. The consulting firm MIG categorized the existing land use types consistent with the character of the new PlaceTypes and determined the existing distribution of demographic data within the PlaceTypes. Table A shows the existing distribution of demographic data for 2012, the base year of the 2016 RTP/SCS.



Legend

Maximum Building Heights

- 2 Stories
- 3 Stories
- 4 Stories
- 5 Stories
- 6 Stories
- 7 Stories
- 10-16 Stories
- 35 - 75 Feet
- 80 - 100 Feet
- 135 - 150 Feet
- 240 Feet and Over

Please refer to height number for maximum building height

Building Height Boundary

40 FT / 4 ST — Building Height (Feet and/or Stories)

LSA

N

0 .5 1 MILE

SOURCE: Proposed Land Use Element, City of Long Beach, March 2018

FIGURE 1

Long Beach General Plan
Land Use and Urban Design Elements
PlaceType Height Limitations

I:\CLB1804\G\Chapter 3\PlaceType Height Limititations.cdr (10/12/2018)

This page intentionally left blank

Areas of Change Description

1 More Open Space
2 Convert to Neo-Industrial Uses
3 Promote Regional-Serving Uses
4 Transition from Industrial to Commercial Uses
5 Promote Transit-Oriented Development Uses
6 Continue Downtown Development
7 Promote Infill and Redevelopment to Support Transit
8 Redevelop to Highest and Best Use

Legend

PlaceTypes

OS - Open Space

Neighborhoods

N - Founding and Contemporary Neighborhood
MFR -L - Multi-Family Residential - Low
MFR -M - Multi-Family Residential - Moderate

Mixed Use

NSC-L - Neighborhood-Serving Center or Corridor - Low
NSC-M - Neighborhood-Serving Center or Corridor - Moderate
TOD-L - Transit-Oriented Development - Low
TOD-M - Transit-Oriented Development - Moderate

Employment

CC - Community Commercial
I - Industrial
NI - Neo-Industrial

Unique

RSF - Regional-Serving Facility
DT - Downtown
WF - Waterfront

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

LSA

FIGURE 2

N

0 .5 1
MILE

SOURCE: Proposed Land Use Element, City of Long Beach, March 2018

Long Beach General Plan
Land Use and Urban Design Elements
Major Areas of Change

I:\CLB1804\G\Chapter 3\Major Areas of Change.cdr (10/12/2018)

This page intentionally left blank

Table A: Existing (2012) Demographic Data Distribution

PlaceType	Housing Units	Population	Employment
Open Space	0	0	11,993
Founding and Contemporary Neighborhood	104,019	302,902	39,075
Multi-Family – Low	7,326	17,734	288
Multi-Family – Moderate	12,124	32,132	0
Neighborhood Serving Centers and Corridors – Low	5,216	14,956	5,433
Neighborhood Serving Centers and Corridors – Moderate	9,538	25,711	6,149
Community Commercial	2,922	8,970	12,670
Transit-Oriented Development – Low	2,741	10,255	3,459
Transit-Oriented Development – Moderate	1,955	7,347	2,467
Neo-Industrial	1,384	5,060	2,580
Industrial	958	3,496	7,193
Downtown	11,768	27,112	16,660
Waterfront	2,843	4,821	8,390
Regional Serving Facility	1,000	5,759	36,797
TOTAL	**163,794**	**466,255**	**153,154**

Sources: MIG and Southern California Association of Governments (SCAG).

Previously Analyzed and Approved Growth

Many of the planned changes in PlaceType have already been analyzed through various Specific Plans (e.g., Downtown Plan, Midtown Specific Plan, Douglas Park Rezone Project, and Southeast Area Specific Plan) that are being incorporated into the proposed Land Use Element. Additionally, City staff has reviewed discrete project applications. These applications provided data regarding the geographic location, size, and PlaceType for the specific approved and anticipated projects, but also trends indicating the potential for future development applications. The previously approved Specific Plans, previously approved development projects, and data on development trends greatly informed the distribution of demographic growth.

Housing

The Specific Plans indicated that 17.5 percent of housing growth would occur in the Downtown PlaceType, 12.7 percent of housing growth would occur in the Transit-Oriented Development areas of the Midtown Specific Plan, and 9.1 percent of housing growth would occur in the Southeast Area Specific Plan. Cumulatively, these previous plans allocated 39.3 percent of the anticipated future housing.

The remaining housing was distributed across remaining PlaceTypes with potential for residential development. Development applications and trends indicate that 7.7 percent of housing growth (a combination of accessory dwelling units and single-family infill development) is likely to occur in Founding and Contemporary Neighborhoods. The allocation of the remaining 53 percent of housing growth was weighted based on the density levels proposed in the Land Use Element. Specifically, Moderate Density Transit-Oriented Development may be denser than Low Density Transit-Oriented Development, which is denser than Moderate Density Multi-Family or Neighborhood Serving Centers, which are denser than Low Density Multi-Family or Neighborhood Serving Centers. PlaceTypes such as Waterfront and Neo-Industrial have some residential development today and

may see some growth by 2040. Table B shows the resulting distribution of the anticipated 28,524 new housing units.

Table B: Demographic Growth Distribution and Future (2040) Demographic Data

PlaceType	Housing Units			Population			Employment		
	2012	2040	Δ	2012	2040	Δ	2012	2040	Δ
Open Space	0	0	0	0	0	0	11,993	12,737	744
Founding and Contemporary Neighborhood	104,019	106,215	2,196	302,902	304,305	1,403	39,075	39,487	412
Multi-Family – Low	7,326	8,474	1,148	17,734	18,468	734	288	306	18
Multi-Family – Moderate	12,124	14,419	2,295	32,132	33,599	1,467	0	30	30
Neighborhood Serving Centers and Corridors – Low	5,216	6,364	1,148	14,956	15,690	734	5,433	5,770	337
Neighborhood Serving Centers and Corridors – Moderate	9,538	11,833	2,295	25,711	27,178	1,467	6,149	6,531	382
Community Commercial	2,922	2,922	0	8,970	8,970	0	12,670	13,456	786
Transit-Oriented Development – Low	2,741	7,995	5,254	10,255	13,613	3,358	3,459	3,674	215
Transit-Oriented Development – Moderate	1,955	8,355	6,400	7,347	11,437	4,090	2,467	2,620	153
Neo-Industrial	1,384	1,484	100	5,060	5,124	64	2,580	2,937	357
Industrial	958	958	0	3,496	3496	0	7,193	7442	249
Downtown	11,768	16,760	4,992	27,112	30,302	3,190	16,660	21,860	5,200
Waterfront	2,843	2,943	100	4,821	4,885	64	8,390	8,911	521
Regional Serving Facility	1,000	3,596	2,596	5,759	7,418	1,659	36,797	55,904	19,107
TOTAL	**163,794**	**192,318**	**28,524**	**466,255**	**484,485**	**18,230**	**153,154**	**181,665**	**28,511**

Sources: MIG, Southern California Association of Governments (SCAG), and City of Long Beach Downtown Plan, Midtown Specific Plan, Douglas Park Rezone Project, and Southeast Area Specific Plan.
Note: Future forecasted values are estimates and may not be exact where Specific Plan or Traffic Analysis Zone boundaries overlap multiple PlaceTypes.
Δ = change

Population

As new housing units are constructed in an area with existing overcrowded housing, the overcrowding problem is anticipated to decline. However, population is not anticipated to decline in any area of Long Beach as a result of the proposed Land Use Element. Population growth was allocated to PlaceTypes according to the increase in housing. For example, if 8 percent of new housing is anticipated to be in Moderate Density Multi-Family PlaceTypes, then 8 percent of the anticipated population growth is likely to be in Moderate Density Multi-Family PlaceTypes. Table B shows the resulting distribution of the anticipated 18,230 new residents.

Employment

The previous Specific Plans analyzed concentrated employment growth in the Downtown (5,200 new jobs) and Douglas Park (17,965 new jobs) neighborhoods. In Founding and Contemporary Neighborhoods, employment growth was estimated to be proportional to population growth. In other areas of Long Beach, the proportion of existing employment in a PlaceType is likely a good indicator of the potential for employment growth in the future. However, the division of industrial employment growth was rebalanced between Industrial and Neo-Industrial PlaceTypes to reflect the anticipated faster growth in Neo-Industrial areas. Table B shows the resulting distribution of the anticipated 28,511 new jobs.

Change from Existing Conditions

Table B shows the distribution of housing, population, and employment demographic growth across the 14 PlaceTypes. Table B also shows the resulting 2040 demographic data when this growth is added to existing demographic data. The percentage change from existing conditions can be calculated from the demographic data presented in Table B. Performing this exercise shows that the neighborhoods with previously analyzed and approved Specific Plans are anticipated to experience substantial demographic growth. For example, in the Downtown area, housing is anticipated to increase 42 percent, population is anticipated to increase 12 percent (as described previously, much of the housing growth is needed to alleviate existing overcrowding), and employment is anticipated to increase 31 percent over baseline conditions (i.e., 2012, the base year for the 2016 RTP/SCS). Similar large increases in housing and population are anticipated in the Transit Oriented Development PlaceTypes (which account for much of the Midtown Specific Plan). In the Regional Serving Facility PlaceType (much of which is within Douglas Park), employment is anticipated to increase 52 percent over baseline conditions.

While housing, population, and employment have increased in all areas of Long Beach in the past and are expected to increase in all areas of the City in the future, the magnitude of change described in the paragraph above is only anticipated in the Specific Plan areas. Within the Founding and Contemporary Neighborhoods, allocating demographic growth in the manner described above results in an anticipated 2 percent housing increase, a 0.5 percent increase in population, and a 1 percent increase in employment over baseline conditions by 2040.

Existing Housing Units and Non-Residential Square Footage

Similar to the distribution of existing demographic data presented in Table A, MIG determined the number of housing units and the amount of non-residential building square footage within Long Beach during the 2012 baseline conditions. Table C provides this information for the areas defined by the new PlaceTypes. The total number of housing units in each PlaceType is identical between Tables A and C, but Table C further identifies the housing units as either single-family or multi-family. Table C specifies whether non-residential space is commercial, office, industrial, or public facilities/institutional.

General Plan Buildout Housing Units and Non-Residential Square Footage

As stated previously, growth in demographic data is likely to occur regardless of the proposed Land Use Element. Similarly, growth in housing units and non-residential building size may occur regardless of the proposed Land Use Element. However, in the same way that the proposed Land Use Element would affect the distribution of demographic growth, it would affect the distribution of building growth.

All new housing units outside of Founding and Contemporary Neighborhoods would be multi-family. In Founding and Contemporary Neighborhoods, 58 percent of existing dwelling units are single-family, so 58 percent of new units in Founding and Contemporary Neighborhoods were added to single-family (this category includes accessory dwelling units). The remaining 42 percent of housing growth anticipated in Founding and Contemporary Neighborhoods would be in multi-family developments, as it is today. The resulting future distribution of housing units is shown in Table D.

Table C: 2012 Citywide Housing Units and Non-Residential Square Footage

PlaceType	Residential Units			Non-Residential Building Square Footage				
	Single-Family	Multi-Family	Total	Commercial	Office	Industrial	Public Facilities/ Institutional	Total
Open Space	-	-	-	678,900	37,300	1,101,000	3,137,900	4,955,100
Founding and Contemporary Neighborhood	60,524	43,495	104,019	4,803,100	709,900	653,900	8,780,700	14,947,600
Multi-Family – Low	611	6,715	7,326	42,800	2,100	-	63,500	108,400
Multi-Family – Moderate	411	11,713	12,124	-	-	-	-	-
Neighborhood Serving Centers and Corridors – Low	760	4,456	5,216	1,890,300	165,600	99,800	146,400	2,302,100
Neighborhood Serving Centers and Corridors – Moderate	486	9,052	9,538	2,121,500	262,700	169,600	87,000	2,640,800
Community Commercial	85	2,837	2,922	4,274,400	341,300	1,062,300	142,800	5,820,800
Transit-Oriented Development – Low	272	2,469	2,741	998,000	199,100	7,500	200,000	1,404,600
Transit-Oriented Development – Moderate	195	1,760	1,955	787,300	52,000	6,000	163,100	1,008,400
Neo-Industrial	88	1,296	1,384	383,900	14,200	1,311,900	19,100	1,729,100
Industrial	145	813	958	319,800	368,700	4,066,800	196,500	4,951,800
Downtown	345	11,423	11,768	1,954,200	3,899,300	49,400	600,800	6,503,700
Waterfront	6	2,837	2,843	2,086,900	772,200	-	501,700	3,360,800
Regional Serving Facility	6	994	1,000	674,500	1,160,000	9,042,800	7,434,500	18,311,800
2012 Total	**63,934**	**99,860**	**163,794**	**21,015,600**	**7,984,400**	**17,571,000**	**21,474,000**	**68,045,000**

Sources: MIG (March 2016)

Table D: 2040 Citywide Housing Units and Non-Residential Square Footage

PlaceType	Residential Units			Non-Residential Building Square Footage				
	Single-Family	Multi-Family	Total	Commercial	Office	Industrial	Public Facilities/ Institutional	Total
Open Space	-	-	-	746,470	41,012	1,210,582	3,260,588	5,258,652
Founding and Contemporary Neighborhood	61,798	44,417	106,215	4,878,304	721,015	664,138	8,840,703	15,104,160
Multi-Family – Low	611	7,863	8,474	19,877	975	0	94,892	115,744
Multi-Family – Moderate	411	14,008	14,419	11,668	572	0	0	12,240
Neighborhood Serving Centers and Corridors – Low	760	5,604	6,364	1,983,341	173,751	104,712	177,792	2,439,596
Neighborhood Serving Centers and Corridors – Moderate	486	11,347	11,833	2,198,853	272,278	175,784	149,741	2,796,656
Community Commercial	85	2,837	2,922	4,515,814	360,576	1,122,298	142,800	6,141,488
Transit-Oriented Development – Low	272	7,723	7,995	951,691	189,862	7,152	343,615	1,492,320
Transit-Oriented Development – Moderate	195	8,160	8,355	682,522	45,080	5,201	338,021	1,070,824
Neo-Industrial	88	1,396	1,484	437,000	16,164	1,493,358	21,837	1,968,359
Industrial	145	813	958	331,354	382,021	4,213,735	196,500	5,123,610
Downtown	345	16,415	16,760	2,431,634	5,392,148	64,289	737,229	8,625,300
Waterfront	6	2,937	2,943	2,240,059	828,872	0	504,437	3,573,368
Regional Serving Facility	6	3,590	3,596	1,262,512	2,171,258	16,926,078	7,505,452	27,865,300
2040 Total	**65,208**	**127,110**	**192,318**	**22,691,099**	**10,595,584**	**25,987,327**	**22,313,607**	**81,587,617**
2012 Total	**63,934**	**99,860**	**163,794**	**21,015,600**	**7,984,400**	**17,571,000**	**21,474,000**	**68,045,000**
Δ	**1,274**	**27,250**	**28,524**	**1,675,499**	**2,611,184**	**8,416,327**	**839,607**	**13,542,617**

Sources: MIG, City of Long Beach Downtown Plan, Midtown Specific Plan, Douglas Park Rezone Project, and Southeast Area Specific Plan
Δ = change

Non-residential building size is anticipated to increase according to employment growth, which is a demographic growth area disclosed in Table B. Data in Table A regarding total employment by PlaceType and data in Table C regarding commercial, office, and industrial space by PlaceType reveals that about 380 square feet (sf) per employee is provided in Founding and Contemporary Neighborhoods, about 670 sf per employee is provided in Neo-Industrial areas, about 690 sf per employee is provided in Industrial areas, about 500 sf per employee is provided in Regional Serving Facilities, and an average of 408 sf per employee is provided for all other PlaceTypes. Based on the new employment disclosed in Table B, the total amount of new non-residential space can be calculated for each PlaceType.

This total non-residential space would occur as commercial, office, industrial, or public facilities/ institutional buildings based on the community's needs. For example, public facilities/institutional buildings are likely to grow in proportion to the population that they serve. Since 2012 to 2040 citywide population is projected to increase by 4 percent, public facilities/institutional space would likely also increase by 4 percent (i.e., new 839,607 sf citywide). In the baseline, 15 percent of the public facilities/ institutional space is in Open Space (e.g., parks), which is likely to respond to citywide population growth. Therefore, 15 percent of public facilities/institutional growth was allocated to open space (i.e., 122,688 sf). The remaining 716,919 sf of public facilities/institutional growth was allocated according to the percent of population growth in each PlaceType. However, Moderate Density Multi-Family areas have no public facilities/institutional space in existing conditions, and no new space was allocated to this PlaceType. The resulting future distribution of public facilities/institutional space is shown in Table D.

Growth in commercial, office, and industrial building size is driven by market trends that are revealed by examining the existing proportion of space serving each land use as shown in Table C. The public facilities/institutional growth calculated as described above was subtracted from the total new square footage and allocated the remainder to commercial, office, and industrial based on the baseline percent of non-public facilities/institutional uses in each PlaceType. In Low Density Multi-Family, Low Density Transit-Oriented Development, and Moderate Density Transit-Oriented Development PlaceTypes, the amount of public facilities/institutional growth resulting from the methodology above exceeds the total growth in non-residential space. The result is a projection that some non-residential space would be removed from Multi-Family and Transit-Oriented Development PlaceTypes and replaced with residential and public facilities/institutional use. In other words, as areas identified for Multi-Family and Transit-Oriented Development uses redevelop, the redevelopment is likely to replace existing (primarily commercial retail) uses. The resulting distribution of commercial, office, and industrial space is shown in Table D.

This page intentionally left blank

APPENDIX F:

PUBLIC SERVICE PROVIDER LETTERS AND RESPONSES

This page intentionally left blank

LONG BEACH FIRE DEPARTMENT QUESTIONNAIRE

For your convenience, we have provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. We would very much appreciate a response by **Friday, November 2, 2018**. Please return the completed questionnaire via email to shelby.cramton@lsa.net.

1. **Please evaluate the following statement for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below.**

The Long Beach Fire Department (LBFD) is the primary authority in the City responsible for providing fire protection, medical, rescue, disaster response, public safety education, community service, and environmental emergency services. LSA understands that the LBFD has a total of 531 full time equivalent (FTE) uniformed and non-uniformed personnel.[1]

The LBFD currently operates 23 fire stations located throughout the City, the Beach Operations headquarters and lifeguard facilities, and the LBFD headquarters.[2] The planning area includes the entire area within the City's jurisdictional limits (approximately 50 square miles). As such, all 23 stations, the lifeguard facilities, and the related training centers and headquarters would serve the planning area.

The LBFD goals for emergency response are to respond to 90 percent of emergency calls within 5 minutes or less. Currently, the average Citywide response time from dispatch to arrival is 4.7 minutes.

According to the City's Adopted Budget for Fiscal Year (FY) 2019, it is the stated goal of the LBFD to respond to structure fire calls within 6 minutes and 20 seconds or less.[3] Response time is impacted by many factors, including increasing call volume and station location. Approximately 85 percent of the LBFD emergency responses are medical in nature. The LBFD goals for emergency response are to respond to 90 percent of emergency calls within 5 minutes or less. Currently, the average Citywide response time from dispatch to arrival is 4.7 minutes.

The LBFD receives funding from the following four sources: (1) the City's General Fund (76 percent of LBFD expenditures), the Tidelands Operations Fund (22 percent of LBFD expenditures), (3) the Certified Unified Program Agency (CUPA) (1 percent of LBFD expenditures), and (4) the Police and Fire Public Safety Oil Production Act (Proposition H) (1 percent of LBFD expenditures).[4] The City's FY 2019 adopted budget for the LBFD was $126,877,832, which represents approximately 4 percent of the total budget for all departments ($3.04 billion).

---

1 City of Long Beach Fire Department. Website: http://www.longbeach.gov/fire/ (accessed July 6, 2018).

2 City of Long Beach Fire Department. Station Locations. Website: http://www.longbeach.gov/fire/about-us/station-locations/ (accessed September 4, 2018).

3 City of Long Beach. FY 2019 Adopted Budget. Website: http://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/fy-19-proposed-budget/fy-19-proposed-final-book (accessed October 4, 2018).

4 Ibid.

2. **Are there any current or future plans for expansion of LBFD facilities, services, and/or staff or to construct a new facility? If yes, please explain.**

   The LBFD is slated for two new fire stations (FS15 and FS20). Both stations are located within the Port complex. The staffing will be consistent with our current model. Fire Station 17 is tentatively scheduled to expand the staffing model by adding an Engine Company (4 FTE positions) in early 2019. The engine is required to meet the existing needs of the community. FY19 budget also includes a new HEART (Homeless Education and Response Team) unit. Additionally, the LBFD is exploring funding sources to build, relocate or consolidate fire facilities to improve service and decrease response times. Due to staffing and space requirements, the LBFD is actively researching options to expand the footprint of Fire Headquarters. Currently, there are not enough work stations for LBFD staff.

3. **Would the project substantially increase response times or create a substantial increase in demand for staff, facilities, equipment, or fire or other emergency services (e.g., as a result of a potential increased call volume)? Please note that buildout projections for year 2040 associated with approval of the proposed project would allow for an increase of up to approximately 28,524 dwelling units, the addition of up to approximately 18,230 persons, and an increase of up to approximately 28,511 new jobs. The estimated City population at General Plan buildout (2040) would be approximately 484,485.**

   The project will create the need to increase staff and expand services for the new population (residents, visitors and workforce). The population increase will strain the existing system and negatively impact the call volume, response times and resources. The project will also impact non-emergency services provided by the Fire Department (inspections, plan check, community relations, ect…).

4. **Does the City have an expected ratio of fire department staff per 1,000 residents?**

   No

5. **Will the LBFD be able to adequately serve the existing community and the proposed project? If not, can you recommend any measures for mitigating project impacts that might be incorporated into the project?**

   The LBFD is fundamentally required to meet the needs of the community. The project will require the LBFD to expand emergency and non-emergency services and will strain the existing system. Measures to lessen the impact of the project would include the following:
   - **Increase FD funding to support impact of project**
   - **Increase staffing (sworn/non-sworn)**
   - **Relocate/Build new fire station(s)**

6. **Please provide any additional comments or questions you would like to see addressed in the environmental analysis for this project.**

Prepared by: Matthew Gruneisen

Title: Deputy Chief, Fire Prevention

Date: October 31, 2018

Phone: 562-570-2579

POLICE PROTECTION

For your convenience, we have provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. We would very much appreciate a response by **Friday, November 2, 2018.** Please return the completed questionnaire via email to shelby.cramton@lsa.net.

1. **Please evaluate the following statements for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below.**

The Long Beach Police Department (LBPD) provides local police protection services to the City. The LBPD consists of four separate bureaus: (1) the Investigation Bureau, (2) the Support Bureau, (3) the Patrol Bureau, and (4) the Administration Bureau.[1] The Investigation Bureau consists of the Detective Division, the Gang and Violent Crimes Division, the Forensic Science Services Division, and the Criminal Intelligence Division. This Investigation Bureau is responsible for investigating crimes, analyzing evidence, apprehending suspects, preventing abuse, and promoting positive relationships between police officers and youth. The Support Bureau consists of the Security Services, Communications and Training, the Port Police, and the Jail Divisions. This Support Bureau is responsible for providing specialized security functions, providing enhanced emergency communication services, developing police recruits, and training police officers. The Patrol Bureau is the largest bureau as it encompasses more than half of the LBPD personnel and over 40 percent of its budget. This Patrol Bureau is responsible for providing community policing services. The Administrative Bureau consists of the Fiscal, Personnel, and Records and Technology Divisions. This Administrative Bureau is responsible for processing payments and billings; preparing the annual budget; providing personnel and payroll services; and managing department records, fleet vehicles, and technological activities.

LBPD strives to respond to Priority 1 Calls for Service (crime in progress/life-threatening situations) in 5 minutes or less, on average. In 2017, the average response time to Priority 1 Calls was 4.7 minutes.[2] Priority 2 Calls are non-emergency calls for crimes that have been committed with possible evidence available. The LBPD goal is to respond to Priority 2 Calls for service in 20 minutes or less, on average. Priority 3 calls are generally related to crimes with no evidence potential, but are required or desired to take a report of a crime. The LBPD goal is to respond to Priority 3 calls for service in 30 minutes or less, on average. As such, Priority 1 Calls receive LBPD's fastest response time. The LBPD states that existing resources, including personnel, equipment, and facilities, are able to adequately serve the City under current conditions.

---

[1] City of Long Beach Police Department. Website: http://www.longbeach.gov/police/ (accessed July 27, 2018).

[2] City of Long Beach. FY 2019 Adopted Budget. Website: http://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/fy-19-proposed-budget/fy-19-proposed-final-book (accessed October 4, 2018).

The LBPD is also a part of the Los Angeles County Law Enforcement Mutual Aid Organization, which is overseen by the Los Angeles County Sheriff's Department. In the event that mutual aid is required for an emergency situation, the Emergency Operations Bureau of the Los Angeles County Sheriff's Department is notified and, in turn, notification of other cities in predetermined response groups would occur.

The LBPD FY 2019 budget accounts for approximately 1,241 FTEs.[1] The LBPD receives funding from the following four sources: (1) the City's General Fund (92 percent of the LBPD budget), (2) General Grants (2 percent of the LBPD budget), (3) the Tidelands Operations Fund (5 percent of the LBPD budget), and (4) the Police and Fire Public Safety Oil Production Act (Proposition H) (1 percent of the LBPD budget). The City's FY 2019 adopted budget for the LBPD was $258,957,589, which represents approximately 8.5 percent of the total budget for all departments ($3.04 billion).

The LBPD now has five bureaus. The Fiscal Division is now under the Financial Bureau.

2. **Are there any current or future plans for expansion of LBPD facilities, services, or staff or to construct a new facility? If yes, please explain.**

As of November 2018, the LBPD does not currently have plans to expand LBPD facilities, services or staff. The LBPD currently operates a Training Division facility, which is planned to be renovated through re-construction in 2020 through 2021. Additional expansion will be determined when the fiscal year 2020 budget is developed, which is tentatively scheduled for July-September 2019.

3. **Would the project substantially increase response times or create a substantial increase in demand for staff, facilities, equipment, or police or other emergency services (e.g., as a result of potential increase in call volume)? Please note that buildout projections for year 2040 associated with approval of the proposed project would allow for an increase of up to approximately 28,524 dwelling units, the addition of up to approximately 18,230 persons, and an increase of up to approximately 28,511 new jobs. The estimated City population at General Plan buildout (2040) would be approximately 484,485.**

The LBPD anticipates an increase in both sworn and civilian staff to maintain current service levels for a larger population, and would include the necessary vehicles, equipment and training. The LBPD currently staffs sworn at a ratio of 18.2 officers per 10,000 residents.

[1] Long Beach Police Department. 2018. *FY 2018 Adopted Budget*. Website: http://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/fy-18-adopted-budget-webpage/32-police (accessed July 27, 2018).

4. **Are there any specific crime prevention design features that the LBPD recommends for incorporation into the proposed project?**

There are a select number of officers who are trained to conduct CPTED Evaluations (Crime Prevention Through Environmental Design) This is a site survey of the design of a business or apartment complex where a recommendation is made on adequate lighting, landscaping, signs, surveillance camera placement, etc. for the purpose of reducing crime in and around the property.

5. **Based on the proposed project description, will the LBPD be able to adequately serve the proposed project? If not, can you recommend any measures for mitigating project impacts that might be incorporated into the project?**

In order to provide the same level of police services to the city during and after the proposed project, the level of sworn and support staffing will need to increase as the project increases the number of residences, jobs, and visitors.

6. **Please provide any additional comments or questions you would like to see addressed in the environmental analysis for this project.**

Prepared by: Rico Fernandez

Title: Sergeant

Date: 11/15/18

Phone: (562) 570-7214

LSA

LONG BEACH PUBLIC LIBRARY QUESTIONNAIRE

For your convenience, we have provided space below for your answers. If you choose to answer these questions in the form of a letter, please number your responses to correspond to the questions. We would very much appreciate a response by **Friday, November 2, 2018**. Please return the completed questionnaire via email to shelby.cramton@lsa.net.

1. **Please evaluate the following statements for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below. Please fill in missing information (highlighted below).**

The LBPL system provides library services to the City and includes 12 branch locations throughout the City.[1] The Long Beach Main Library is located in the southern portion of the City at 101 Pacific Avenue, in the Civic Center. In total, the LBPL system has approximately [ ] square feet (sf) of library facilities and approximately [ ] total library materials (includes hardcopies and online resources). In FY 2019, the City's Library Services proposes 128.09 full-time equivalent (FTE) personnel.[2]

748,760

237,695 as indicated on page 2→

Libraries in the LBPL system are closed on Mondays and are open from 12:00 p.m. to 7:00 p.m. (Main Library, from 12:00 p.m. to 8:00 p.m.) on Tuesdays, from 12:00 p.m. to 6:00 p.m. on Wednesdays, from 12:00 p.m. to 7:00 p.m. on Thursdays, from 10:00 a.m. to 5:00 p.m. on Fridays and Saturdays, and from 12:00 p.m. to 4:00 p.m. on Sundays (Bay Shore, Burnett, El Dorado, and Michelle Obama Libraries only).[3] Library hours are subject to change.

While the City has not formally adopted a service standard of library space per capita, the City did establish a target of 0.45 sf per capita in its budget for FY 2007.[4] Using this standard and 469,796 as the estimated 2018 population with a total citywide library square footage of 237,695, the LBPL currently provides approximately 0.51 sf per capita; according to the service standard, this represents a surplus of library space by 0.06 sf per capita.

The LBPL receives funding from the following three sources: (1) the City's General Fund (96 percent of the LBPL budget), (2) General Grants (3 percent of the LBPL budget), and (3) the Civic Center (1 percent of the LBPL budget). The City's FY 2019 adopted budget for LBPL was $14,838,826, which for LBPL represents about 0.5 percent of the total budget for all departments ($3.04 billion).

---

1 Long Beach Public Library (LBPL). Website: Library Locations, http://www.lbpl.org/locations/library_locations.asp, (accessed July 30, 2018).

2 City of Long Beach. FY 2019 Adopted Budget. Website: http://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/fy-19-proposed-budget/fy-19-proposed-final-book (accessed October 4, 2018).

3 LBPL. Library Hours. Website: http://www.lbpl.org/locations/library_hours.asp (accessed July 30, 2018).

4 FY 2007 is the most current year for which target library performance standards have been established. As noted above, these standards have not been formally adopted by the City.

2. **Table A, LBPL Statistics, details specific information such as library size, population served, and specific collection items for each library within the LBPL system. Please confirm the information is accurate and fill in missing information under the Michelle Obama Neighborhood Library (highlighted below).**

updated based on FY 18 data

Table A: LBPL Statistics

chart from 2012

Library	Year Built	Council	Population Served	Schools Served	Hours Open per Week	Items Circulated Annually	Reference Questions Answered Annually	Staff FTE	No. of Volumes	Square Feet
Main	1977	2	491,564	6	35	467,920	241,895	54.85	320,495	135,000
Alamitos	1929	2	53,536	3	34	51,409	8,305	4.19	34,303	7,475
Ruth Bach	1958	5	32,054	16	34	105,706	20,264	4.02	40,832	7,000
Bay Shore	1959	3	26,693	4	38	96,397	30,942	4.02	41,902	6,900
Brewitt	1948	4	32,577	8	34	60,798	10,873	4.19	31,351	5,225
Burnett	1969	6	47,802	9	38	49,691	34,917	5.04	50,043	7,500
Dana	1958	7	41,791	8	34	128,043	16,822	4.36	45,146	6,800
El Dorado	1970	5	20,055	11	34	170,890	20,975	5.92	56,836	8,160
Bret Harte	1957	7	35,879	9	34	70,696	25,625	5.26	42,261	6,500
Los Altos	1957	4	39,296	11	34	113,132	9,370	4.09	43,587	6,750
Mark Twain	2007	6	57,433	5	34	147,111	19,416	8.94	63,837	16,000
Michelle Obama[1]	2016	9	~95,000	17	38					24,655
Total	-	-	-	-	-	TBD	TBD	TBD	TBD	**237,695**

Source: Long Beach Public Library. Facts and Figures. Website. http://www.lbpl.org/info/about/facts_and_figures.asp (accessed July 30, 2018). LBPL.
[1] Michelle Obama Neighborhood Library. Website: http://www.lbpl.org/locations/michelle_obama/default.asp (accessed September 1, 2018).
FTE = full time equivalent
LBPL = Long Beach Public Library
TBD = to be determined

	(Circ)	(Ref Q)	(FTE)	(Volumes)
Main	121,376	65,231	69.02	279,436
Alamitos	39,988	7,885	3.85	32,377
Bach	79,684	15,450	3.85	45,539
Bay Shore	71,396	44,565	3.85	44,231
Brewitt	51,390	22,890	3.85	35,339
Burnett	40,276	35,060	4.25	39,972
Dana	77,398	13,423	3.85	41,844
El Dorado	135,611	22,355	5.75	60,687
Harte	38,238	12,610	4.75	40,977
Los Altos	84,452	17,145	3.85	42,242
Mark Twain	73,890	31,060	6.52	67,554
Michelle Obama	133,204	120,775	12.22	62,013

3. **Will the project create a further need to expand existing and planned library facilities or staff, construct a new facility, or otherwise adversely impact the types of services you provide? Please note that buildout projections for year 2040 associated with approval of the proposed project would allow for an increase of up to approximately 28,524 dwelling units, the addition of up to approximately 18,230 persons, and an increase of up to approximately 28,511 new jobs. The estimated City population at General Plan buildout (2040) would be approximately 484,485.**

No.

4. **Based on the information provided above, will the proposed project adversely affect library services near the project area? If yes, can you recommend any measures for mitigating project impacts that might be incorporated into the proposed project?**

Unknown...

5. **Please provide the LBPL standard service ratios (i.e. square feet per capita for library space, volumes per capita for library collections, circulation per capita)**

(2016-17) library visits per capita 2.19
total collection " " 1.58
circulation " " 2.78
total expenditure " " $29.76

6. **Please provide the number of computers in the LBPL system.**

261 Internet access
+35 catalog only & children

7. **Please provide any additional information, including tables and maps that may be helpful in preparing an environmental assessment of the proposed project with relation to library services. Please provide any additional comments or questions you would like to see addressed in the environmental assessment for the proposed project.**

Prepared by: Amber Ahlo (with assistance from other staff)

Title: Administrative Officer

Date: 11/05/18

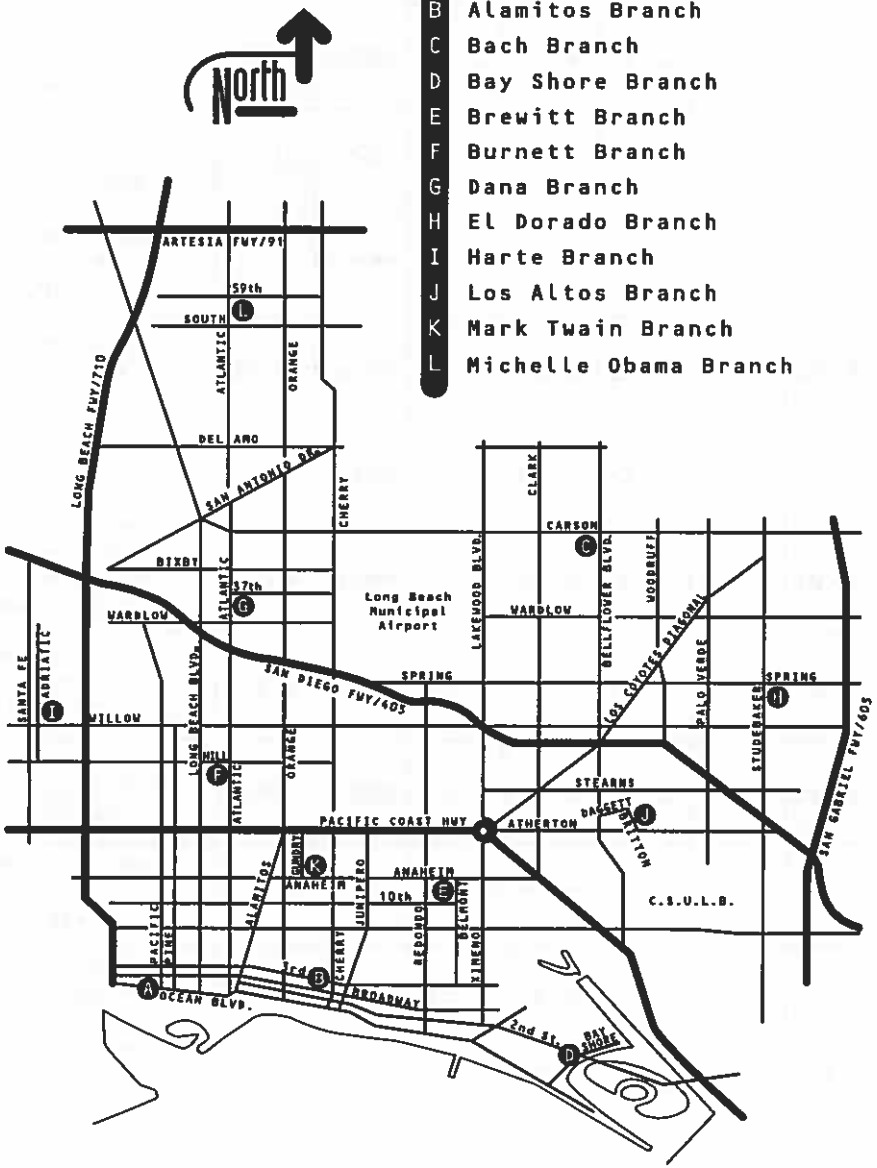
Phone: 562-570-6110

LONG BEACH PUBLIC LIBRARIES

knowledge gives us wings

LONG BEACH PUBLIC LIBRARY

- A Main Library
- B Alamitos Branch
- C Bach Branch
- D Bay Shore Branch
- E Brewitt Branch
- F Burnett Branch
- G Dana Branch
- H El Dorado Branch
- I Harte Branch
- J Los Altos Branch
- K Mark Twain Branch
- L Michelle Obama Branch

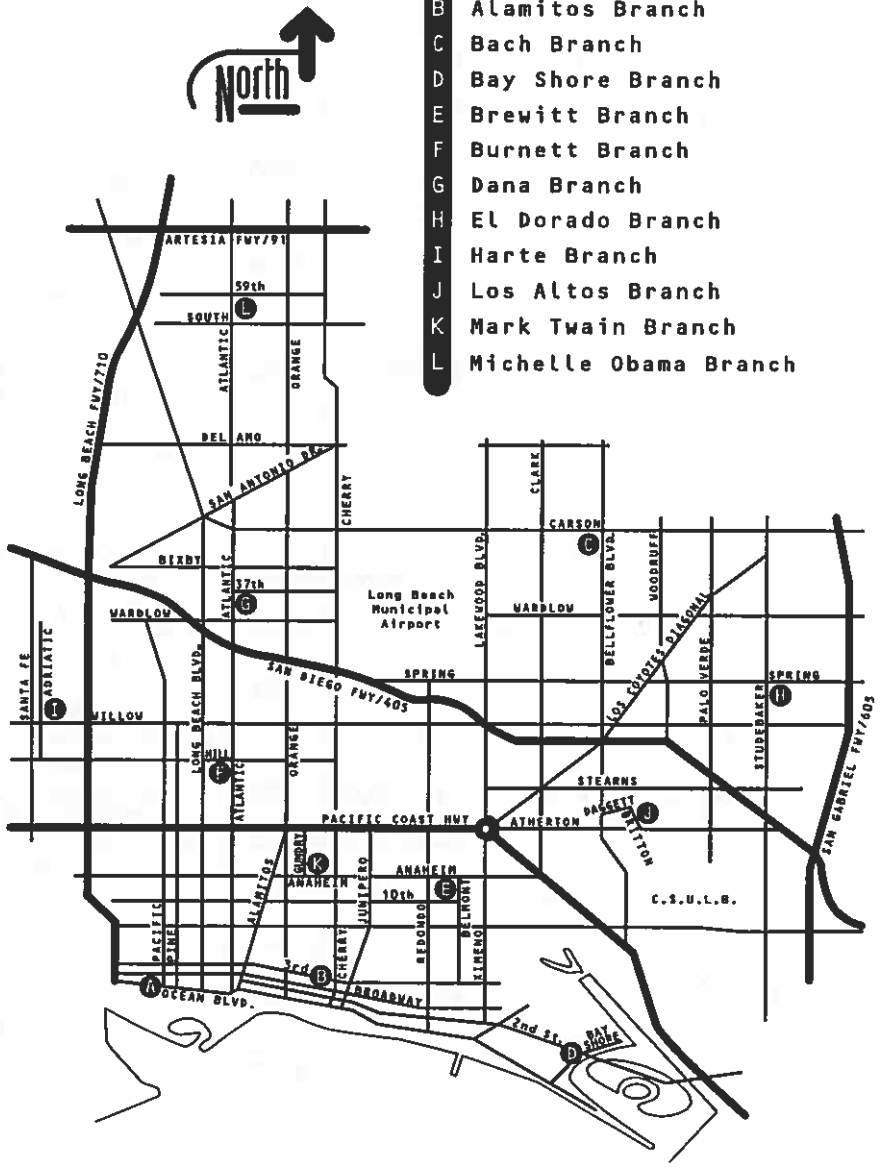


LONG BEACH PUBLIC LIBRARIES

knowledge gives us wings

LONG BEACH PUBLIC LIBRARY

- A Main Library
- B Alamitos Branch
- C Bach Branch
- D Bay Shore Branch
- E Brewitt Branch
- F Burnett Branch
- G Dana Branch
- H El Dorado Branch
- I Harte Branch
- J Los Altos Branch
- K Mark Twain Branch
- L Michelle Obama Branch



CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

October 12, 2018

Christopher Steinhauser
Superintendent
Long Beach Unified School District
1515 Hughes Way
Long Beach, CA 90810

Subject: General Plan Land Use and Urban Design Element Update Environmental Impact Report

Dear Mr. Steinhauser:

This letter has been sent to you as part of an environmental review process being conducted pursuant to the California Environmental Quality Act (CEQA). The City of Long Beach (City) has determined that preparation of an Environmental Impact Report (EIR) is necessary to adequately analyze the environmental effects of the proposed General Plan Land Use and Urban Design Elements Project (proposed project). The City is the Lead Agency, and LSA has been retained by the City to prepare the environmental analysis required for the proposed project.

Preparation of an EIR for the proposed project began in 2015, and a Draft EIR was prepared and circulated for public review from September 1, 2016, to November 18, 2016. Based on comments received during the Draft EIR public review period, changes were made to the project design to address concerns related to height, density, additional housing units, and traffic. As such, a Recirculated Draft EIR is being prepared to evaluate environmental impacts associated with the revised project.

The project site includes the entire 50 square miles within the limits of the City of Long Beach (excluding the City of Signal Hill). The proposed project is an update to the City's existing General Plan and is intended to guide growth and future development through the year 2040. The proposed project includes the approval of both the General Plan Land Use Element (LUE) and Urban Design Element (UDE), which would replace the existing LUE and Scenic Routes Element.

The projections associated with approval of the proposed LUE would allow, at buildout year 2040, for an increase of up to approximately 28,524 dwelling units, the addition of up to approximately 18,230 persons, and an increase of up to approximately 28,511 new jobs. The estimated City population at General Plan buildout (2040) would be approximately 484,485. The proposed project is a General Plan, a programmatic-level project, and no development plans are being considered at this time. Therefore, LSA is reaching out to the Long Beach Unified School District (LBUSD) to better understand impacts that would result from approval of the proposed project.

LSA is seeking information on how the proposed project would affect the LBUSD's ability to provide services and whether the project would require new or expanded facilities. To assist with this effort, a questionnaire has been enclosed with specific questions relating to services in the City. It would be

20 Executive Park, Suite 200, Irvine, California 92614 949.553.0666 www.lsa.net

helpful to the analysis for us to receive a response by **Friday, November 2, 2018**. Please email your response to shelby.cramton@lsa.net.

If you have any questions or comments on the questionnaire, please contact me at (949) 553-0666. Thank you for your time and assistance.

Sincerely,

LSA Associates, Inc.

Ashley Davis
Principal

Attachment: LBUSD Questionnaire

LONG BEACH UNIFIED SCHOOL DISTRICT QUESTIONNAIRE

For your convenience, space is provided below for your responses. If you choose to respond to these questions in the form of a letter, please number your responses to correspond to the questions. LSA would very much appreciate your response by **Friday, November 2, 2018**. Please return the completed questionnaire via email to shelby.cramton@lsa.net.

1. **Please evaluate the following statement for accuracy. If any of the information contained in the text below is incorrect or should be updated, please indicate the needed revisions below.**

The provision of education and school facilities in the City is the responsibility of the Long Beach Unified School District (LBUSD), which is currently the third largest school district in the State[1] and serves approximately 75,000 students in 87 schools in the Cities of Long Beach, Carson, Lakewood, Signal Hill, and Avalon (on Catalina Island). During the 2018-2019 school year, LBUSD's annual operating budget totaled $949 million.[2] The LBUSD overall budget consists of the combined expenditure plans for ten separate funds.[3] The General Fund accounts for the cost of direct institution and support services to LBUSD's elementary, middle, and high school students. Most of the LBUSD revenue comes from the State through the Local Control Funding Formula (LCFF).[4]

2. **In Table A, LBUSD Student Enrollment (2017-2018), please confirm that the enrollment information is correct.** Confirmed

Table A: LBUSD Student Enrollment (2017-2018)

School Level	LBUSD Student Enrollment	Student Enrollment Outside the City of Long Beach	Student Enrollment within the City of Long Beach
Elementary School	34,204	3,834	30,370
Middle School	17,076	2,043	15,033
High School	23,381	4,036	19,365
Total	**74,681**	**9,913**	**64,768**

Source: California Department of Education. DataQuest. 2017-18 Enrollment By Grade – Long Beach Unified District Report (accessed September 4, 2018).
LBUSD = Long Beach Unified School District
NOTE: Student enrollment includes 20 ungraduated high school students (15 students enrolled within the City of Long Beach, 5 students enrolled outside the City of Long Beach).

[1] Long Beach Unified School District (LBUSD). Website: http://www.lbschools.net/District/ (accessed October 5, 2018).
[2] Ibid.
[3] Long Beach Unified School District (LBUSD). Website: http://www.lbschools.net/District/ (accessed July 30, 2018).
[4] LBUSD. 2018. *2018–2019 Adopted Budget.* Website: http://www.lbschools.net/Asset/Files/ Business_ Services/ Financial/2018-19-Final-Budget-for-Web-062218.pdf (accessed July 30, 2018).

3. **In Table B, LBUSD Capacities and Student Enrollment (2017-2018), please confirm that the capacity information is correct.** Confirmed

Table B: LBUSD Capacity and Student Enrollment (2017–2018)

School Level	Facilities Capacity	Existing Enrollment in LBUSD	Excess/ (Shortage) Capacity
Elementary Schools	44,779	40,139	4,460
Middle Schools	13,776	11,273	2,503
High Schools	23,750	23,164	586
Total	**82,305**	**74,576**	**7,729**

Source: Long Beach Unified School District. *School Facilities Needs Analysis,* Table 6 (February 2018).
LBUSD = Long Beach Unified School District

4. **LSA is aiming to ascertain the number of elementary school students, middle school students, and high school students that would be generated by the proposed project. Please confirm that the following generation rates in Table C, LBUSD Student Generation Factors, would apply to the proposed project.** Confirmed

Table C: LBUSD Student Generation Factors

School Level	Generation Rate for Single-Family Detached Units	Generation Rate for Single-Family Attached Units	Generation Rate for Multi-Family Units
Elementary Schools	0.1611	0.0792	0.0511
Middle Schools	0.1141	0.0297	0.0219
High Schools	0.1141	0.0297	0.1022

Source: Long Beach Unified School District. *School Facilities Needs Analysis,* Tables 1 through 3 (February 2018).
LBUSD = Long Beach Unified School District

5. **Please confirm the developer fees shown in Table D, LBUSD Developer Fees, are current.** Confirmed

Table D: LBUSD Developer Fees

Type of Development[1]	Fee per Square Foot
Residential Level I	$3.79
Residential Level II	$4.14
Commercial/Industrial Level 1	$0.61

[1] Level II fees are statutory fees assessed to residential additions over 500 square feet and to all commercial development and redevelopment projects; Level II fees are alternative school fees assessed to new residential construction and residential redevelopment.
Source: LBUSD. Facilities Development & Planning Branch: Developer Fees. *Website: http://www.lbusd.k12.ca.us/Departments/Business_Services/developer_fees.cfm*.
LBUSD = Long Beach Unified School District

6. **Are there current plans for construction of a new school that would serve the project area?**

   None at this time.

7. **Is there an existing need for an additional school in the project area?**

   None at this time

8. **Will the proposed project, as described in the enclosed letter, create a need to expand existing school facilities or staff, construct a new school facility, or otherwise adversely impact the types of services which the LBUSD provides? Please note that buildout projections for year 2040 associated with approval of the proposed project would allow for an increase of up to approximately 28,524 dwelling units, the addition of up to approximately 18,230 persons, and an increase of up to approximately 28,511 new jobs. The estimated City population at General Plan buildout (2040) would be approximately 484,485.**

   Yes, the proposed project, as described in the letter may create a need to expand existing school facilities or staff, construct a new school facility, or otherwise adversely impact the types of services which the LBUSD provides. Please provide specifics of locations i.e. cross streets for development in order for LBUSD to further research the regional schools/areas that will be impacted.

9. **Based on the information provided above, will the proposed project adversely affect school facilities near the project area?**

   Yes, based on the information provided above, the proposed project may adversely affect school facilities near the project area.

10. Please provide any additional information, including tables and maps, which may be helpful in preparing an environmental assessment of the proposed Project with relation to schools.

see attached district map.

Prepared by: Melanie Nazarbekian

Title: Assistant Project Manager

Date: 11/5/2018

Phone: 562-997-7550

Long Beach Unified School District

Planning Areas

Legend

Planning Area A - Jordan

Addams ES	(410)
Barton ES	(412)
CAMS HS	(641)
Dooley ES	(455)
Grant ES	(431)
Hamilton MS	(612)
Harte ES	(432)
Jordan HS	(652)
Jordan Plus	(679)
King ES	(436)
Lindbergh MS	(616)
Lindsey MS	(635)
McKinley ES	(446)
Powell K-8	(492)

Planning Area B - Lakewood

Bancroft MS	(615)
Cleveland ES	(422)
Gompers K-8	(430)
Henry ES	(433)
Holmes ES	(434)
Hoover MS	(625)
Lakewood HS	(653)
MacArthur ES	(433)
Madison ES	(444)
Riley ES	(451)
Twain ES	(458)

Planning Area C - Millikan

Burcham ES	(418)
Carver ES	(421)
Cubberley K-8	(423)
Emerson ES	(425)
Keller MS	(605)
Marshall MS	(617)
McBride HS	(668)
Millikan HS	(658)
Newcomb K-8	(465)
Prisk ES	(450)
Stanford MS	(619)

Planning Area D- Cabrillo

Cabrillo HS	(657)
Chavez ES	(403)
Edison ES	(424)
EPHS	(667)
Garfield ES	(429)
Hudson K-8	(464)
Lafayette ES	(437)
Muir K-8	(448)
Reid HS	(682)
Stephens MS	(620)
Washington MS	(622)
Webster ES	(459)

Planning Area E - Polytechnic

Alvarado ES	(404)
Butler MS	(627)
Birney ES	(413)
Franklin MS	(611)
Hughes MS	(613)
International ES	(407)
Lincoln ES	(439)
Longfellow ES	(440)
Los Cerritos ES	(441)
Nelson MS	(623)
PAAL HS	(670)
Poly HS	(654)
Renaissance HS	(681)
Robinson K-8	(406)
Roosevelt ES	(452)
Signal Hill ES	(453)
Smith ES	(419)
Stevenson ES	(454)
Whittier ES	(460)

Planning Area F - Wilson

Beach HS	(691)
Bixby ES	(414)
Bryant ES	(415)
Buffum TLC	(416)
Burbank ES	(417)
Fremont ES	(427)
Gant ES	(428)
Jefferson MS	(614)
Kettering ES	(466)
Hill MS	(626)
Lee ES	(438)
Lowell ES	(442)
Mann ES	(445)
Naples ES	(449)
Rogers MS	(618)
Sato HS	(672)
Tincher K-8	(463)
Tucker	(457)
Willard ES	(461)
Wilson HS	(656)

Planning Area G - Catalina

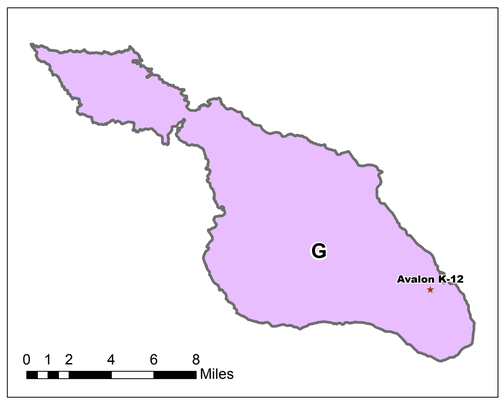
Avalon K-12	(411)

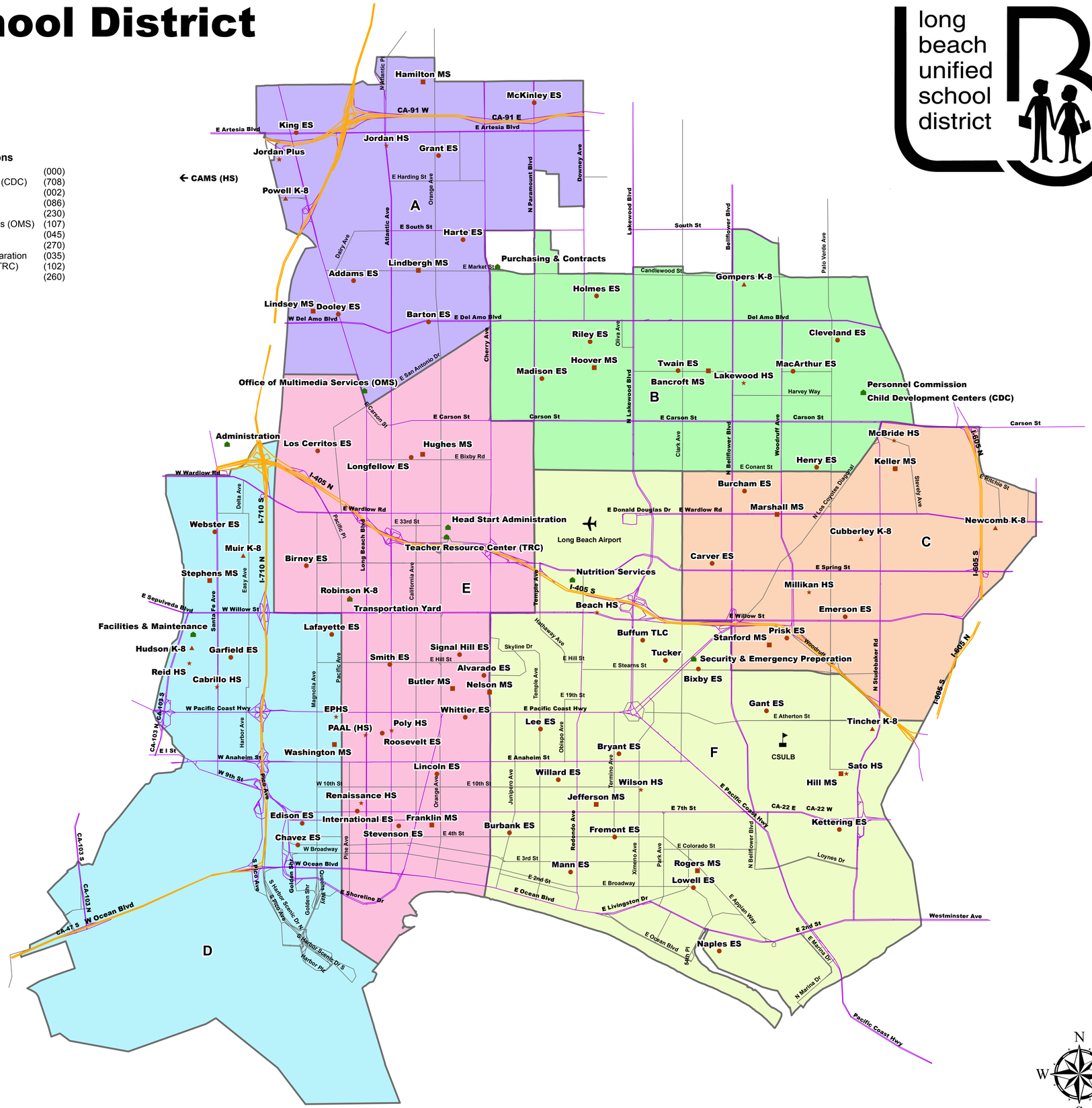
Central Service Locations

Administration	(000)
Child Development Centers (CDC)	(708)
Facilities & Maintenance	(002)
Head Start Administration	(086)
Nutrition Services	(230)
Office of Multimedia Services (OMS)	(107)
Personnel Commission	(045)
Purchasing & Contracts	(270)
Security & Emergency Preparation	(035)
Teacher Resource Center (TRC)	(102)
Transportation Yard	(260)

Location Types

- ES
- MS
- K-8
- HS
- Central Services





Created April 2016

DECISION INSITE
Enrollment Impact Specialists

APPENDIX G:

TRAFFIC IMPACT ANALYSIS

This page intentionally left blank

TRAFFIC IMPACT ANALYSIS

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS

LONG BEACH, CALIFORNIA

LSA

June 2019

This page intentionally left blank

TRAFFIC IMPACT ANALYSIS

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS

LONG BEACH, CALIFORNIA

Submitted to:

Christopher Koontz, Planning Manager
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

LSA
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

Project No. CLB1804

June 2019

This page intentionally left blank

TABLE OF CONTENTS

INTRODUCTION 1
PROJECT DESCRIPTION 2
Quantity of Growth 2
Distribution of Growth 3
METHODOLOGY 3
Study Area Intersections 3
Intersection LOS Methodology 19
City Jurisdiction 20
Caltrans Jurisdiction 20
LOS Descriptions 20
Significant Impact Threshold 21
Congestion Management Program Methodology 21
Caltrans Methodology 22
State Highway Segments 22
State Highway/Arterial Intersections 22
Performance Standard and Impact Thresholds 22
On-Ramps and Off-Ramps 23
Vehicle Miles Traveled 23
EXISTING CONDITIONS 24
Existing Circulation System 24
Existing Transit Service 32
Existing Intersection LOS Analysis 32
GENERAL PLAN HORIZON YEAR (2040) NO PROJECT 35
GENERAL PLAN ANTICIPATED BUILDOUT (2040) WITH PROPOSED PROJECT 35
PROJECT IMPACTS 42
CONGESTION MANAGEMENT PROGRAM ANALYSIS 53
Arterial Monitoring Station Locations 53
CMP Transit Analysis 54
CALTRANS FACILITY ANALYSIS 55
State Highway Segments 56
Freeway Merge and Diverge Segments 57
Freeway Ramp Intersections and Arterial State Highway Intersections 67
On-Ramps and Off-Ramps 70
VEHICLE MILES TRAVELED 70
MITIGATION MEASURES 73
CONCLUSION 81
REFERENCES 83

FIGURES

Figure 1: Proposed Land Use Element Project PlaceTypes 5
Figure 2: Proposed Land Use Element PlaceType Maximum Building Height Limitations 7
Figure 3: Proposed Land Use Element Major Areas of Change 9
Figure 4: Existing Transit-Priority Streets 11
Figure 5: Bicycle Master Plan 13
Figure 6: Study Area Intersections 17
Figure 7: Existing Transit Service 33

TABLES

Table A: Existing Intersection Level of Service Summary 36
Table B: General Plan Horizon Year (2040) No Project Intersection Level of Service Summary 39
Table C: General Plan Anticipated Buildout (2040) With Proposed Project Intersection Level of Service Summary 43
Table D: Intersection Level of Service Comparison – Proposed Project versus Existing Conditions 46
Table E: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project 50
Table F: CMP Intersection Summary 54
Table G: Traffic Growth from Existing Conditions Freeway Level of Service Summary 58
Table H: Traffic Growth from Existing Conditions State Route Level of Service Summary 61
Table I: Traffic Growth from Existing Land Use Element Conditions Freeway Level of Service Summary 62
Table J: Traffic Growth from Existing Land Use Element Conditions State Route Level of Service Summary 65
Table K: Freeway Ramp Merge and Diverge Level of Service Summary 66
Table L: Freeway Ramp and State Highway Intersection Level of Service Summary 68
Table M: On-Ramp and Off-Ramp Volume and Recommended Lanes 71
Table N: Regional Per-Capita VMT Comparison 72
Table O: Long Beach VMT 72
Table P: Potential Mitigation for Impacts to Intersections 74

APPENDICES

A: TRAFFIC VOLUME DATA
B: INTERSECTION CAPACITY UTILIZATION LEVEL OF SERVICE WORKSHEETS
C: CALTRANS FACILITY ANALYSIS WORKSHEETS
D: HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE WORKSHEETS

LONG BEACH GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS TRAFFIC IMPACT ANALYSIS

LSA has prepared the following analysis to identify traffic impacts arising from changes to land uses resulting from the City of Long Beach (City) adopting revised Land Use and Urban Design Elements of the General Plan. LSA has prepared this analysis consistent with the City of Long Beach *Traffic Impact Analysis (TIA) Guidelines* (2018), the Los Angeles County *Congestion Management Program* (CMP) (Metro 2010), Caltrans *Guide for Preparation of Traffic Impact Studies* (2002), and applicable provisions of the California Environmental Quality Act (CEQA).

INTRODUCTION

In 2017, the Governor's Office of Planning and Research (OPR) released revised State of California General Plan Guidelines. The elements required to be discussed in a General Plan are: Land Use, Circulation, Housing, Conservation, Open Space, Noise, Safety, Environmental Justice, and Air Quality. General Plans may contain additional elements (such as Urban Design) tailored to a jurisdiction's needs. The Housing Element must be continuously updated and assess current housing needs and include action programs for providing adequate housing for all economic segments of the community. However, the Housing Element must be consistent with the land use designations in the Land Use Element. The Circulation Element and Land Use Elements must be coordinated to ensure that transportation infrastructure and investments are supportive of planned land uses.

In Long Beach, the City Council adopted the latest Mobility Element in October 2013 and the latest Housing Element in January 2014. The current Land Use Element was adopted in 1989. Land use restrictions embodied in the 1989 Land Use Element are not supportive of the city's housing needs. Since 1989, the Long Beach population has grown by 45,000 residents, but fewer than 5,000 housing units have been built to accommodate that population growth. Overcrowding has resulted from the current Land Use Element, as confirmed in the City's own Assessment of Fair Housing (AFH), adopted in 2016 as required by the Department of Housing and Urban Development (HUD). The City has been working to update the Land Use Element since 2004. The Land Use Element is supported by an Urban Design Element guiding the form that development may take within the revised land use designations. In 2016, the City completed a program-level Environmental Impact Report (EIR) for a Land Use Element and an Urban Design Element that incorporated the mobility plans of the Mobility Element and the housing needs addressed in the Housing Element. This EIR, however, was not certified and changes to the land use and height maps were requested by the City Council.

The purpose of this Traffic Impact Analysis (TIA) is to inform the revised EIR and identify potential traffic and circulation impacts alone or cumulatively on intersections and adjacent freeway facilities associated with the changes in land use facilitated by the Land Use and Urban Design Elements. The traffic impact analysis examines traffic conditions in three scenarios:

1. Existing (2018) conditions
2. General Plan Horizon Year (2040) With Current Land Use Element (No Project)
3. General Plan Anticipated Buildout (2040) With Proposed Land Use and Urban Design Elements (Plus Project)

PROJECT DESCRIPTION

The Land Use Element does not propose construction of any new structures within Long Beach. The Land Use Element cannot mandate construction of any new structures within Long Beach. As is evident by the documented increase in population growth in Long Beach despite lack of requisite housing to support that growth, the Land Use Element does not influence demographic trends. The Land Use Element guides growth by affecting the location and density of development as it occurs in response to market demands. The Urban Design Element affects the form this development takes when designed and constructed. Developing the Land Use and Urban Design Elements begins with identifying projected growth in population, housing, and employment (i.e., demographic data). The appropriate location for development to accommodate socioeconomic growth is then identified in the Land Use Element, and the form and character of such development is specified in the Urban Design Element.

Quantity of Growth

The California State Department of Finance and California Employment Development Department prepare projections of population and employment growth for the State and its regions. For the Southern California region, the Metropolitan Planning Organization (MPO) is the Southern California Association of Governments (SCAG). SCAG uses the data provided by the State and projects population and employment growth for subregions and jurisdictions as part of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) process. For the 2016 RTP/SCS, SCAG forecasts a population growth of 18,230 new residents and employment growth of 28,511 new jobs in Long Beach by 2040.

Projecting housing needs follows a similar process, whereby the State (i.e., the Department of Housing and Community Development) provides regional housing projections to the region (i.e., SCAG), which in turn projects housing growth for local jurisdictions. Unlike other data projections, rather than being simply informative, the housing allocation provided to jurisdictions through the Regional Housing Needs Assessment (RHNA) process is enforceable through the Housing Accountability Act. As an outcome of the most recent RHNA process, the City is required to plan for 7,048 new dwelling units to accommodate future population growth. However, due to insufficient construction of new housing units in the past (within Long Beach and the region), Long Beach has many residential areas where housing units are overcrowded. The City has engaged in an Assessment of Fair Housing (AFH, 2016) with the United States Department of Housing and Urban Development.

The AFH demonstrated that the City needs 21,476 additional housing units to address existing housing needs due to overcrowding. In total, Long Beach requires 28,524 housing units to address future population growth (7,048 units needed) and existing population living in overcrowded conditions (21,476 units needed) housing needs. It is this number of units, which complies with both the State and federal assessments, that must be accommodated in City planning documents.

As a result of the processes described above, the following quantities of demographic data growth are anticipated in the proposed Land Use Element:

- **Population:** 18,230 new residents, for a total of 484,485 by 2040
- **Housing:** 28,524 new dwelling units, for a total of 192,318 by 2040
- **Employment:** 28,511 new jobs anticipated, for a total of 181,665 by 2040

Distribution of Growth

In a departure from the existing Land Use Element, which segregates property with traditional single-use land use designations, the proposed Land Use Element establishes 14 PlaceTypes that would divide Long Beach into district neighborhoods, each with their own sense of character and place. PlaceTypes would allow for a combination of land uses at varying densities and intensities to allow for greater flexibility and a mix of compatible land uses within these areas. Figure 1 displays the proposed locations of PlaceTypes, and Figure 2 displays the proposed height limits throughout Long Beach.

Under the proposed Land Use Element, approximately 13 percent of Long Beach is proposed to result in concentrated land use changes as compared to existing conditions. These areas are referred to "Major Areas of Change" throughout the proposed Land Use Element. The Major Areas of Change signify areas where demographic growth is anticipated to be most profound; however, areas that are not designated as "Major Areas of Change" and/or are not anticipated to result in changes in existing land use patterns may also experience development. Figure 3 displays the Major Areas of Change.

These areas of concentrated land use changes were identified because they are supported by alternative transportation options consistent with the Mobility Element. Figure 4 displays the transit-priority streets in Long Beach. Figure 5 displays the Bicycle Master Plan. Concentrating the increased land use density along the corridors with existing and planned infrastructure to support alternative modes of travel can result in reduced automobile trips generated from these land uses.

Traffic potentially generated by the land uses necessary to accommodate projected future demographic growth, in the Major Areas of Change identified for that growth by the Land Use Element, is analyzed in this TIA.

METHODOLOGY

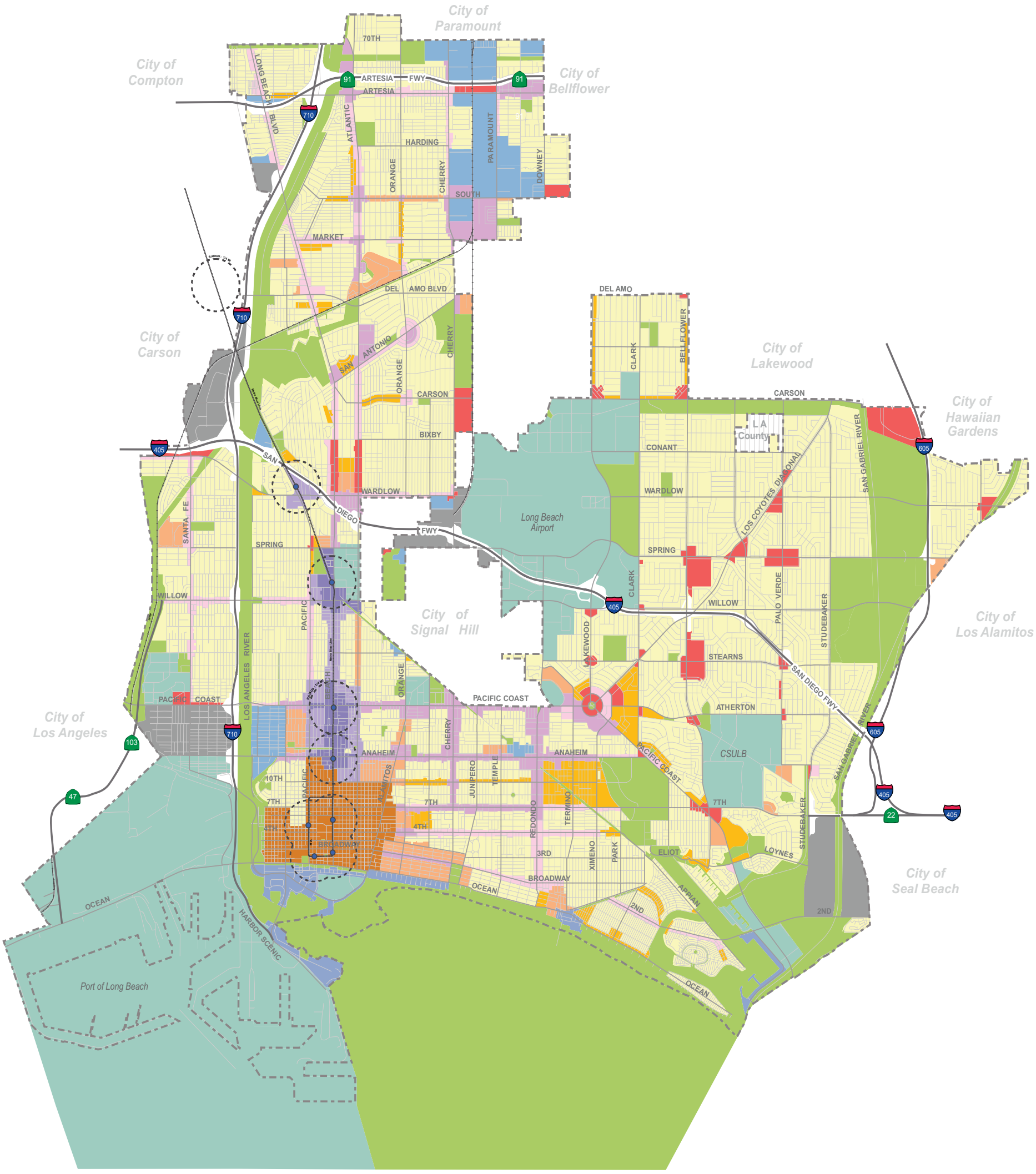
This TIA has been prepared consistent with the City's *TIA Guidelines*, the Los Angeles County CMP, California Department of Transportation (Caltrans) methodology, and applicable provisions of CEQA.

Study Area Intersections

The City's *TIA Guidelines* require that the following conditions be analyzed in the report:

1. Existing
2. Existing Plus Project
3. Project Buildout Year + Cumulative Project
4. Project Buildout Year + Project + Cumulative Project

This page intentionally left blank



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD -L - Transit-Oriented Development - Low
- TOD -M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

LSA

N

0 .5 1
MILE

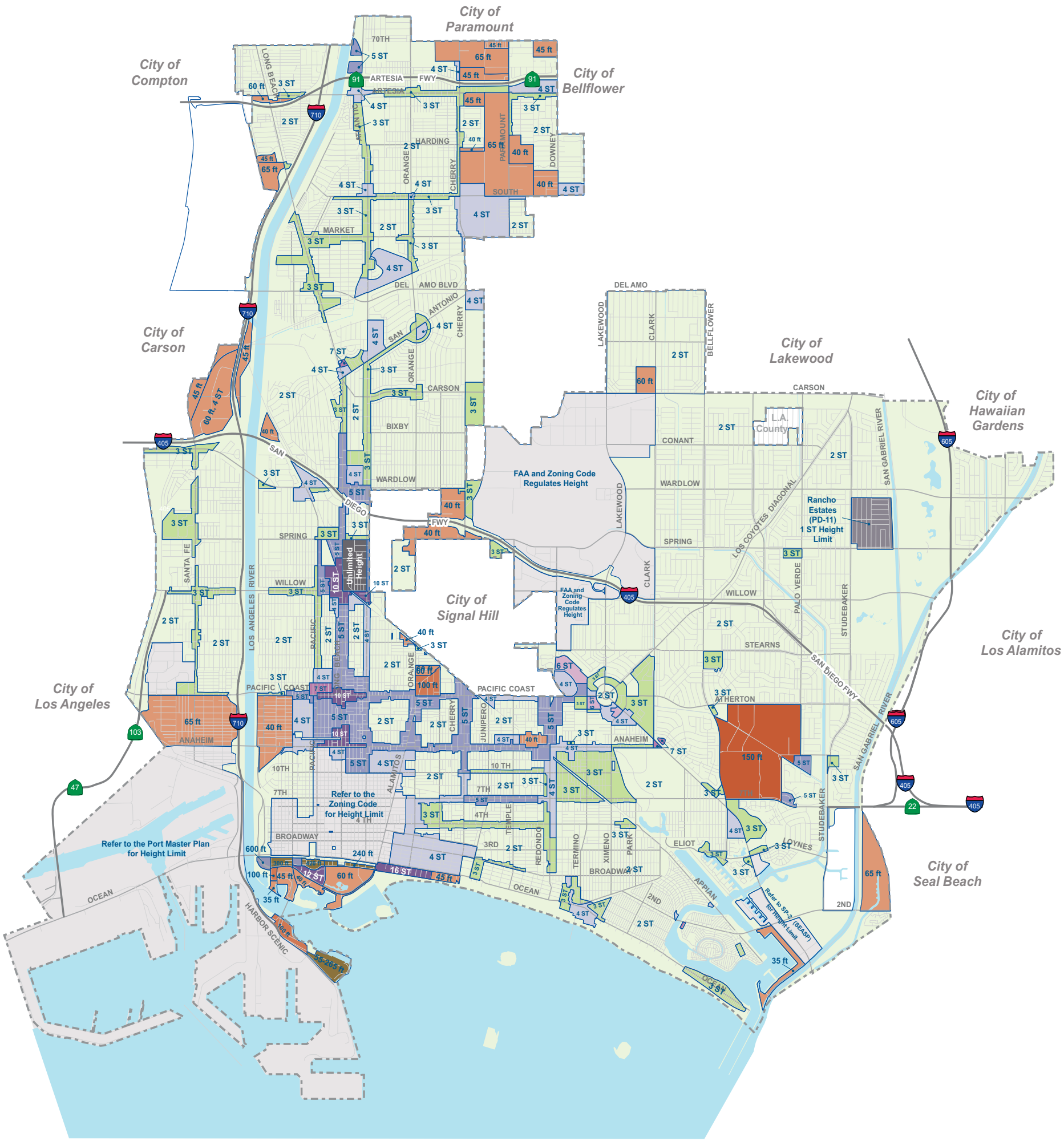
SOURCE: Proposed Long Beach General Plan Land Use Element, March 2018

FIGURE 1

Long Beach General Plan
Land Use and Urban Design Elements
Proposed Land Use Element Project PlaceTypes

I:\CLB1804\G\Chapter 3\Project Placetypes.cdr (1/30/2019)

This page intentionally left blank



Legend

Maximum Building Heights

- 2 Stories
- 3 Stories
- 4 Stories
- 5 Stories
- 6 Stories
- 7 Stories
- 10-16 Stories
- 35 - 75 Feet
- 80 - 100 Feet
- 135 - 150 Feet
- 240 Feet and Over

Please refer to height number for maximum building height

Building Height Boundary

40 FT
4 ST — Building Height (Feet and/or Stories)

LSA

N

0 .5 1
MILE

SOURCE: Proposed Land Use Element, City of Long Beach, March 2018

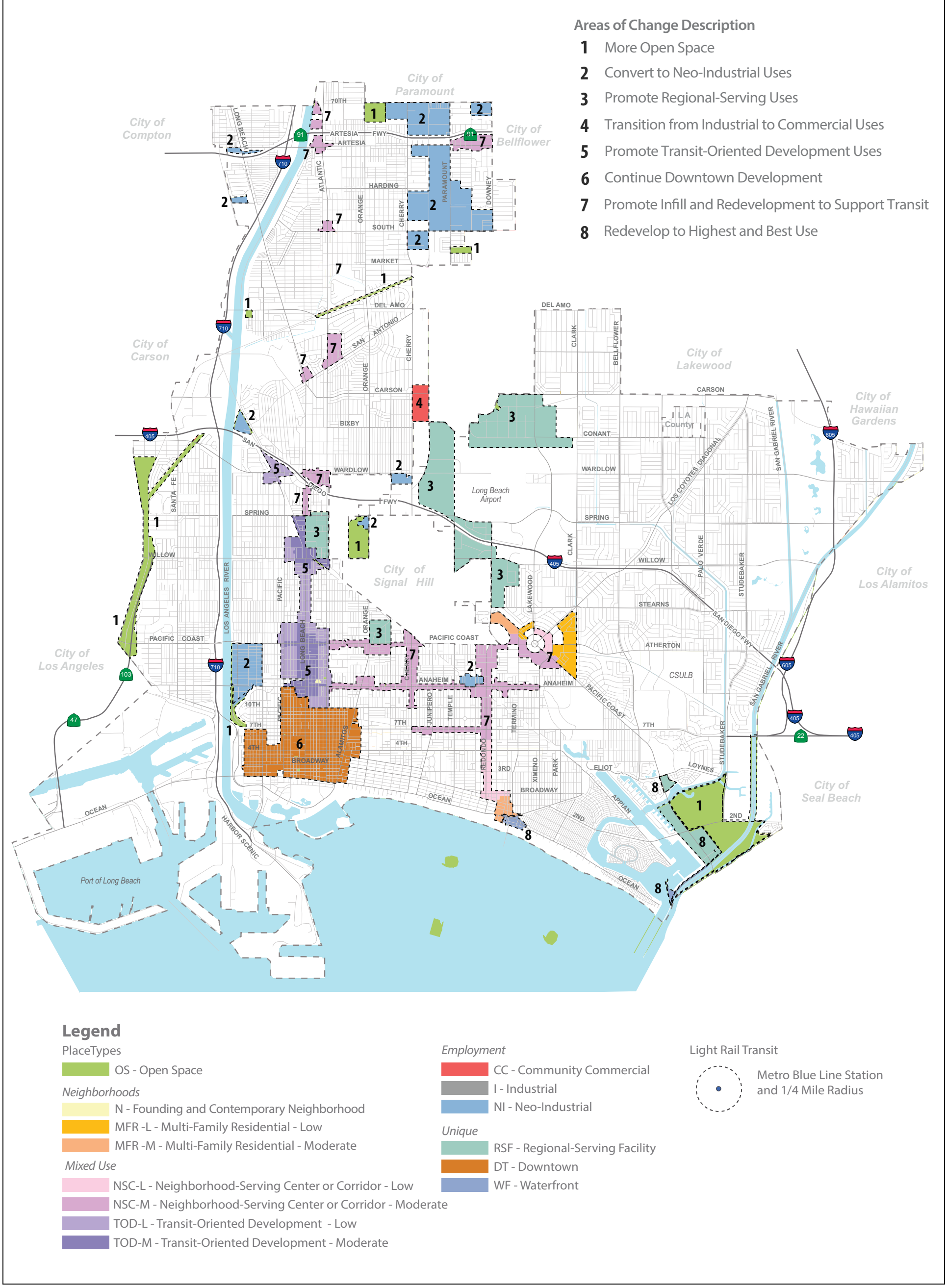
FIGURE 2

Long Beach General Plan
Land Use and Urban Design Elements

Proposed Land Use Element PlaceType Maximum Building Height Limitations

I:\CLB1804\G\Chapter 3\PlaceType Height Limititations.cdr (1/30/2019)

This page intentionally left blank



LSA

FIGURE 3

0 .5 1
MILE

SOURCE: Proposed Land Use Element, City of Long Beach, March 2018

Long Beach General Plan
Land Use and Urban Design Elements
Proposed Land Use Element Major Areas of Change

I:\CLB1804\G\Chapter 3\Major Areas of Change.cdr (1/30/2019)

This page intentionally left blank

LSA

Legend

Transit Route Classification

- Secondary
- Primary
- Multimodal Hub
- Metro Rail Stations
- Metro Rail
- Bus Routes (includes LB Transit, Metro, and OCTA)

N

FIGURE 4

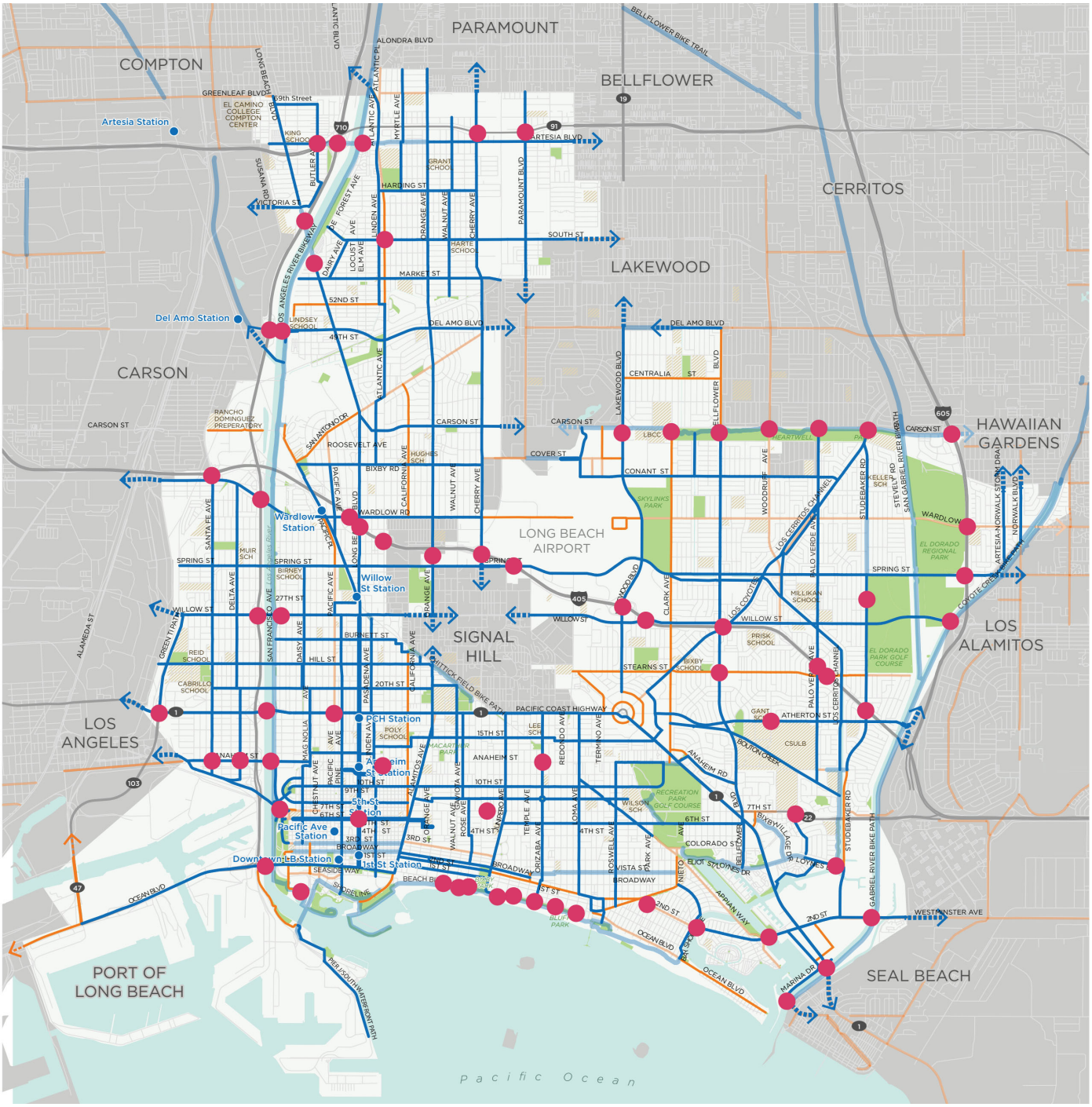
Long Beach General Plan Land Use and Urban Design Elements

Existing Transit-Priority Streets

SOURCE: City of Long Beach, Mobility Element

I:\CLB1804\G\Traffic\Transit-Priority Streets.cdr (4/1/2019)

This page intentionally left blank



LSA

LEGEND

- Spot Improvement
- Recommended 8-to-80 Bikeway
- Recommended Bike Lane
- Existing 8-to-80 Bikeway
- Existing Bike Lane

N

NO SCALE

FIGURE 5

Long Beach General Plan Land Use and Urban Design Elements

Bicycle Master Plan

SOURCE: City of Long Beach, Bicycle Master Plan (2017)

I:\CLB1804\G\Traffic\Bike Master Plan.cdr (6/6/2019)

This page intentionally left blank

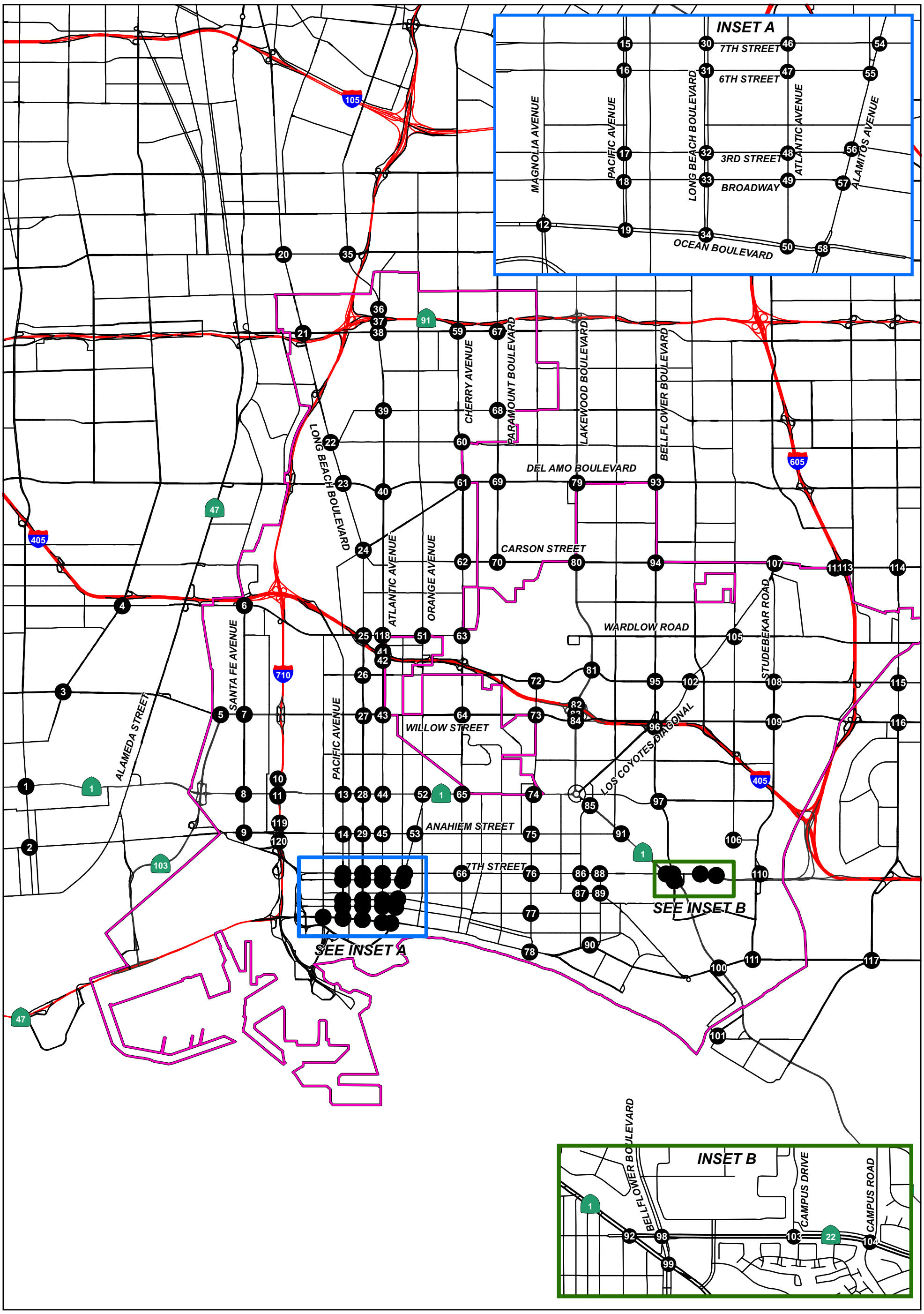
Given the planning nature of the General Plan elements being analyzed, the Existing Plus Project conditions include cumulative projects; therefore, Conditions 2 and 4 are the same. Condition 3 is represented by analysis of the General Plan Horizon Year (2040) with no changes to the current Land Use Element. Therefore, this TIA examines traffic conditions in three scenarios:

1. Existing (2018)
2. General Plan Horizon Year (2040) With Current Land Use Element (No Project)
3. General Plan Anticipated Buildout (2040) With Proposed Land Use and Urban Design Elements (Plus Project)

Traffic analysis of the General Plan Mobility Element included a sample of 88 intersections throughout Long Beach. Those intersections did not include any facilities under Caltrans jurisdiction or in jurisdictions outside of Long Beach. This TIA built on the previously analyzed 88 intersections by adding a sample of intersections in each jurisdiction neighboring Long Beach and a sample of intersections under Caltrans jurisdiction. The initial list of sampled intersections was shared with Caltrans, and additional intersections were added at the request of Caltrans. In total, 120 intersections were included in the study area. Figure 6 displays the location for the following 120 intersections

1. Avalon Boulevard/ Pacific Coast Hwy (Caltrans)
2. Avalon Boulevard/Anaheim Street (Carson)
3. Wilmington Avenue/Sepulveda Boulevard (Carson)
4. Wilmington Avenue/223rd Street (Carson)
5. Terminal Island Freeway/Willow Street (Long Beach)
6. Santa Fe Avenue/Wardlow Road (Long Beach)
7. Santa Fe Avenue/Willow Street (Long Beach)
8. Santa Fe Ave/Pacific Coast Hwy (Caltrans, CMP)
9. Santa Fe Avenue/Anaheim Street (Long Beach)
10. I-710/Pacific Coast Hwy Cloverleaf WB (Long Beach)
11. I-710/Pacific Coast Hwy Cloverleaf EB (Long Beach)
12. Magnolia Avenue/Ocean Boulevard (Long Beach)
13. Pacific Avenue/ Pacific Coast Hwy (Caltrans)
14. Pacific Avenue/Anaheim Street (Long Beach)
15. Pacific Avenue/7th Street (Long Beach)
16. Pacific Avenue/6th Street (Long Beach)
17. Pacific Avenue/3rd Street (Long Beach)
18. Pacific Avenue/Broadway (Long Beach)
19. Pacific Avenue/Ocean Boulevard (Long Beach)
20. Long Beach Boulevard/Alondra Boulevard (Compton)
21. Long Beach Boulevard/Artesia Boulevard (Long Beach)
22. Long Beach Boulevard/Market Street (Long Beach)
23. Long Beach Boulevard/Del Amo Boulevard (Long Beach)
24. Long Beach Boulevard/San Antonio Drive (Long Beach)
25. Long Beach Boulevard/Wardlow Road (Long Beach)
26. Long Beach Boulevard/Spring Street (Long Beach)
27. Long Beach Boulevard/Willow Street (Long Beach)
28. Long Beach Boulevard/Pacific Coast Hwy (Caltrans)
29. Long Beach Boulevard/Anaheim Street (Long Beach)
30. Long Beach Boulevard/7th Street (Long Beach)
31. Long Beach Boulevard/6th Street (Long Beach)
32. Long Beach Boulevard/3rd Street (Long Beach)
33. Long Beach Boulevard/Broadway (Long Beach)
34. Long Beach Boulevard/Ocean Boulevard (Long Beach)
35. Atlantic Avenue/Alondra Boulevard (Compton)
36. Atlantic Avenue/SR-91 WB Ramps (Long Beach)
37. Atlantic Avenue/SR-91 EB Ramps (Long Beach)
38. Atlantic Avenue/Artesia Boulevard (Long Beach)
39. Atlantic Avenue/South Street (Long Beach)
40. Atlantic Avenue/Del Amo Boulevard (Long Beach)
41. Atlantic Avenue/33rd Street (Caltrans)
42. Atlantic Avenue/I-405 EB Ramps (Caltrans)
43. Atlantic Avenue/Willow Street (Long Beach)
44. Atlantic Avenue/Pacific Coast Hwy (Caltrans)
45. Atlantic Avenue/Anaheim Street (Long Beach)
46. Atlantic Avenue/7th Street (Long Beach)
47. Atlantic Avenue/6th Street (Long Beach)
48. Atlantic Avenue/3rd Street (Long Beach)
49. Atlantic Avenue/Broadway (Long Beach)
50. Atlantic Avenue/Shoreline Avenue-Ocean Boulevard (Long Beach)
51. Orange Avenue/Wardlow Road (Long Beach)
52. Orange Avenue/ Pacific Coast Hwy (Caltrans, CMP)
53. Alamitos Avenue/Anaheim Street (Long Beach)

This page intentionally left blank



LSA

LEGEND

Study Intersections

City of Long Beach

0 3000 6000
FEET

SOURCE: ESRI Streetmap, 2013.

I:\CLB1804\G\Traffic\Study Intersections.cdr (4/2/2019)

FIGURE 6

Long Beach General Plan Land Use and Urban Design Elements

Study Area Intersections

This page intentionally left blank

54. Alamitos Avenue/7th Street (Long Beach, CMP)
55. Alamitos Avenue/6th Street (Long Beach)
56. Alamitos Avenue/3rd Street (Long Beach)
57. Alamitos Avenue/Broadway (Long Beach)
58. Alamitos Avenue/ Shoreline Avenue-Ocean Boulevard (Long Beach, CMP)
59. Cherry Avenue/Artesia Boulevard (Long Beach)
60. Cherry Avenue/Market Street (Long Beach)
61. Cherry Avenue/Del Amo Boulevard (Long Beach/Lakewood)
62. Cherry Avenue/Carson Street (Long Beach)
63. Cherry Avenue/Wardlow Road (Long Beach)
64. Cherry Avenue/Willow Street (Signal Hill)
65. Cherry Avenue/ Pacific Coast Hwy (Caltrans)
66. Cherry Avenue/7th Street (Long Beach)
67. Paramount Boulevard/Artesia Boulevard (Long Beach)
68. Paramount Boulevard/South Street (Long Beach)
69. Paramount Boulevard/Del Amo Boulevard (Lakewood)
70. Paramount Boulevard/Carson Street (Lakewood)
71. Downey Avenue/Alondra Boulevard (Paramount)
72. Redondo Avenue/Spring Street (Long Beach)
73. Redondo Avenue/Willow Street (Long Beach)
74. Redondo Avenue/Pacific Coast Hwy (Caltrans)
75. Redondo Avenue/Anaheim Street (Long Beach)
76. Redondo Avenue/7th Street (Long Beach)
77. Redondo Avenue/3rd Street (Long Beach)
78. Redondo Avenue/Ocean Boulevard (Long Beach)
79. Lakewood Boulevard/Del Amo Boulevard (Long Beach/Lakewood)
80. Lakewood Boulevard/Carson Street (Long Beach/ Lakewood, CMP)
81. Lakewood Boulevard/Spring Street (Long Beach)
82. Lakewood Boulevard/I-405 WB Ramps (Caltrans)
83. Lakewood Boulevard/I-405 EB Ramps (Caltrans)
84. Lakewood Boulevard/Willow Street (Long Beach, CMP)
85. Ximeno Avenue/Pacific Coast Hwy (Caltrans, CMP)
86. Ximeno Avenue/7th Street (Long Beach)
87. Ximeno Avenue/4th Street (Long Beach)
88. Park Avenue/7th Street (Long Beach)
89. Park Avenue/4th Street (Long Beach)
90. Livingston Drive/2nd Street (Long Beach)
91. Pacific Coast Hwy/Anaheim Street (Caltrans)
92. Pacific Coast Hwy/7th Street (Caltrans, CMP)
93. Bellflower Boulevard/Del Amo Boulevard (Long Beach/Lakewood)
94. Bellflower Boulevard/Carson Street (Long Beach/Lakewood)
95. Bellflower Boulevard/Spring Street (Long Beach)
96. Bellflower Boulevard/Los Coyotes Diagonal (Long Beach)
97. Bellflower Boulevard/Atherton Street (Long Beach)
98. Bellflower Boulevard/7th Street (Long Beach)
99. Bellflower Boulevard/Pacific Coast Hwy (Caltrans)
100. Pacific Coast Hwy/2nd Street (Caltrans, CMP)
101. 1st Street/Marina Drive (Long Beach)
102. Los Coyotes Diagonal/Spring Street (Long Beach)
103. West Campus Drive/7th Street (Long Beach)
104. East Campus Road/7th Street (Long Beach)
105. Palo Verde Avenue/Wardlow Road (Long Beach)
106. Palo Verde Avenue/Anaheim Street (Long Beach)
107. Los Coyotes Diagonal/Carson Street (Long Beach/ Lakewood)
108. Studebaker Road/Spring Street (Long Beach)
109. Studebaker Road/Willow Street (Long Beach)
110. 7th Street/College Park Drive (Long Beach)
111. Studebaker Road/2nd Street (Long Beach)
112. I-605 SB Ramps/Carson Street (Caltrans)
113. I-605 NB Ramps/Carson Street (Caltrans)
114. Norwalk Boulevard/Carson Street (Hawaiian Gardens)
115. Norwalk Boulevard/Cerritos Avenue (Los Alamitos)
116. Los Alamitos Boulevard/Katella Avenue (Garden Grove)
117. Seal Beach Boulevard/Westminster Road (Seal Beach)
118. Atlantic Avenue/I-405 WB Ramps (Caltrans)
119. I-710/Anaheim St Cloverleaf WB (Caltrans)
120. I-710/Anaheim St Cloverleaf EB (Caltrans)

Intersection LOS Methodology

As established in the Mobility Element, the City views mobility as the movement of people and does not consider the movement of vehicles to be the only goal of the City. However, the City's *TIA Guidelines* retain a goal for performance of the vehicle network, which has been assessed by this TIA. Specifically, the performance of intersections was examined during the busiest morning commute hour (a.m. peak hour) and busiest afternoon commute hour (p.m. peak hour).

City Jurisdiction

In accordance with the City's *TIA Guidelines*, the study intersections were analyzed using the intersection capacity utilization (ICU) methodology for signalized intersections. The Traffix (Version 8.0) software application was used to determine the levels of service (LOS). This program calculates LOS based on traffic volume and intersection geometry inputs.

The ICU methodology compares the amount of traffic an intersection is able to process (capacity) to the level of traffic during peak hours (volume). Peak hours are defined as the highest hour between 7:00 a.m. and 9:00 a.m., and between 4:00 p.m. and 6:00 p.m. The resulting volume-to-capacity (v/c) ratio of conflicting turn movements at an intersection sums these critical conflicting v/c ratios for each intersection approach and determines the overall ICU. The resulting ICU is expressed in terms of LOS.

Caltrans Jurisdiction

Caltrans prefers the *Highway Capacity Manual* (HCM) methodology for analysis of intersections. Synchro 10 was the software application used to determine the levels of service (LOS) using HCM methodology. The *Highway Capacity Manual*, 6th Edition (HCM) (TRB 2016) methodology calculates the delay (in seconds per vehicle) experienced by all movements through an intersection—as opposed to capacity—as the measure of effectiveness. The resulting delay is expressed in terms of LOS, much like the ICU methodology.

LOS Descriptions

LOS is a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, speed, delay, and maneuverability on roadway and intersection operations. LOS is assigned along the following letter gradient where LOS A represents free-flow activity, and LOS F represents overcapacity operation:

LOS	Description
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no longstanding traffic queues.
E	Poor operation. Some longstanding vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.
F	Forced flow. Represents jammed conditions. Back-ups from locations downstream or on the cross street restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go-type traffic flow.

Consistent with the City's requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour per lane (vphpl), and a dual turn lane capacity of 2,880. Based on the City's *TIA Guidelines*, a clearance interval of 10 percent has been added to each ICU calculation. The relationship between ICU and LOS is shown below:

Level of Service	Intersection Capacity Utilization
A	< 0.601
B	0.601–0.700
C	0.701–0.800
D	0.801–0.900
E	0.901–1.000
F	> 1.000

The relationship between LOS and the delay (in seconds) at signalized intersections is as follows:

Level of Service	Signalized Intersection Delay (seconds)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board 2016).

Significant Impact Threshold

The City's *TIA Guidelines* state that "the City considers LOS D to be the upper limit of satisfactory operations." However, the Mobility Element suggests that this standard may be flexible on street segments where automobile travel is not emphasized or where widening of an intersection is not practical and pedestrian, bicycle, or transit mobility can be preserved or enhanced by accepting a vehicle LOS below LOS D.

As identified in the City's *TIA Guidelines*, an impact is considered significant where project traffic causes an intersection to deteriorate from LOS D to LOS E or F, or if the project causes an increase in the v/c ratio of 0.02 or greater when the intersection is operating at LOS E or F in the baseline condition.

Congestion Management Program Methodology

The Los Angeles County CMP requires analysis of arterial monitoring intersections where the proposed project will add 50 or more trips during either the a.m. or p.m. peak hours and CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips (by direction) during either the a.m. or p.m. peak hour. Ten CMP monitored intersections are located within Long Beach. These intersections are included in the study area as noted in the list above.

The Los Angeles County CMP determines that a project would have a significant impact if project traffic increases the v/c ratio by 0.02 or more at a facility operating at LOS F. This is a similar to the City's significance threshold.

Additionally, Appendix D.8.4 of the CMP provides a methodology for estimating transit ridership generated by a project to determine whether or not the project is anticipated to result in a significant impact to transit service.

Caltrans Methodology

Within the study area, Caltrans has jurisdiction over two types of facilities: State highway segments (freeway mainline facilities and State highways that function as arterials) and intersections between arterial streets and State highways (on/off-ramps and arterial intersections). The methodology for analyzing potential impacts to Caltrans facilities, including the facilities selected for analysis in this TIA, was reviewed and approved by Caltrans prior to conducting the analysis.

State Highway Segments

Traffic volume in the a.m. and p.m. peak hours is compared to capacity to calculate v/c ratios. Freeway mainline segments are estimated to have a capacity for 2,350 vphpl. Arterial segments are estimated to have a capacity for 1,800 vphpl.

In order to determine the peak-hour operations at the ramp merge/diverge junctions with their respective freeway mainlines, freeway on- and off-ramp merge/diverge junctions are analyzed consistent with the methodology described in Chapter 14, Freeway Merge and Diverge Segments in the HCM 6th Edition and calculated utilizing the HCS7 (Version 7.5) software package. The freeway on- and off-ramp merge/diverge junction peak-hour operation performance measures are based on density, in terms of passenger cars per mile per lane. Freeway on- and off-ramp merge/diverge junctions are considered to operate at LOS F if demand on an on- or off-ramp exceeds the ramp capacity, regardless of the calculated density at the merge/diverge junction.

State Highway/Arterial Intersections

Intersections between State highways and arterial roadways are analyzed applying HCM methodology using Synchro 10 software. Where these intersections are part of a closely spaced system of intersections, the delay caused by interaction between the intersections is included in the calculation of average delay. Some of the study intersections form a cloverleaf interchange without typical stop-control. However, these areas still experience delay and congestion. Analysis of the density within the weaving segment was used to calculate the performance of these intersections. Other intersections formed by freeway off-ramps to arterials lacked stop-control and did not form a weaving segment. Some of these intersections were closely spaced with a stop-controlled intersection. At these locations, the queue of the downstream intersection was examined to determine if the queue was likely to reach and block the off-ramp.

Performance Standard and Impact Thresholds

For State highway segments, the performance standards adopted for facilities of regional significance in the Los Angeles County CMP was applied. Namely, a standard of LOS E is considered

satisfactory except where the base year LOS is worse than LOS E, in which case the base year LOS would be the standard. The General Plan is determined to have a cumulative impact on the facility if the LOS is degraded from an acceptable LOS to LOS F or if additional traffic volume is contributed to a facility operating in excess of its operational standard.

On-Ramps and Off-Ramps

Design guidelines contained in Chapter 504.3 of the Caltrans *Highway Design Manual* (HDM) will be utilized for additional on- and off-ramp capacity analysis. In the case of on-ramps, the HDM provides the following hourly capacity recommendations:

- **Metered Single-Lane On-Ramps:** Recommended for up to 900 vehicles per hour (vph), or
- **Metered Multilane On-Ramps:** When ramp volumes exceed 900 vph

When ramp volumes exceed 1,500 vph, a 1,000-foot (ft) minimum length auxiliary lane should be provided beyond the ramp convergence point.

For off-ramps, the HDM provides the following hourly capacity recommendations:

- When design year estimated volumes exceed 1,500 equivalent passenger cars per hour, a two-lane ramp should be provided.

- Provisions should be made for possible widening to three or more lanes at the crossroads intersection. An auxiliary lane approximately 1,400 ft long should be provided in advance of a two-lane exit. For volumes less than 1,500 equivalent passenger cars per hour but more than 900 vph, a one-lane wide exit ramp should be provided with provision for adding an auxiliary lane and an additional lane on the ramp.

For freeway ramps, the General Plan is determined to have a cumulative impact on the facility if the facility is projected to operate in excess of its operational standard.

Vehicle Miles Traveled

On December 28, 2018, the California Office of Administrative Law cleared the revised CEQA Guidelines for use. Among the changes to the CEQA Guidelines was removal of vehicle delay and LOS from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled (VMT). Lead agencies are allowed to opt in to the revised transportation guidelines, but the new guidelines must be used starting July 1, 2020.

As discussed above, the City of Long Beach Mobility Element began a departure from considering vehicle LOS as the only measure of a transportation system's effectiveness, but the City has not yet established thresholds related to VMT. However, the State law provides sufficient guidance to evaluate the General Plan Land Use and Urban Design Elements' impacts related to VMT.

California Public Resources Code (PRC) Section 15064.3(b)(4) states (in part) that:

> A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household, or in any other measure.

To provide an abundance of information on the effects of the Land Use and Urban Design Elements, this analysis includes VMT in absolute terms, per capita, and per household. For context, Long Beach VMT is compared to the larger Los Angeles County and Southern California regions.

EXISTING CONDITIONS

Existing Circulation System

Key roadways in the vicinity of the proposed project are as follows:

- **Interstate 405 (I-405):** A north-south interstate highway that extends from Orange County in the south to San Fernando in the north. This freeway runs east-west through Long Beach. Access to the Long Beach Airport is provided by I-405.

- **Interstate 605 (I-605):** A north-south interstate highway located east of Long Beach that extends from I-405 in the south to the San Gabriel Valley in the north.

- **Interstate 710 (I-710):** A north-south interstate highway that runs through the west side of Long Beach from the Port of Long Beach in the south to Interstate 10 (I-10) in the north. I-710 is one of the major routes for transportation of goods from the Ports of Long Beach and Los Angeles to distribution centers near downtown Los Angeles. As a result, truck volumes on I-710 are very high.

- **State Route 91 (SR-91):** SR-91 runs east-west through the north part of Long Beach and extends from Riverside in the east to Gardena in the west.

- **Terminal Island Freeway:** According to the Long Beach General Plan Mobility Element (Mobility Element), the Terminal Island Freeway is classified as a boulevard and characterized as a long-distance, medium-speed corridor. This roadway is north-south oriented and generally includes four to eight lanes. Bikeways are neither provided nor planned. Between Willow Street and the Pacific Coast Highway (State Route 1 [SR-1]), the Mobility Element recommends a street character change for the Terminal Island Freeway that includes removal of the truck route designation and better accommodation of the needs for pedestrians, bicyclists, and transit riders.

- **Pacific Coast Highway (SR-1):** Pacific Coast Highway is generally a four- to eight-lane, north-south/east-west roadway that is classified in the Mobility Element as a regional corridor (i.e., a roadway designed for integrational and intercommunity mobility). The Mobility Element also identifies Pacific Coast Highway as a transit primary priority area, one that provides for regional transit service between Lakewood Boulevard and Santa Fe Avenue. This roadway has been designated as a State facility truck route. Class II bikeways are provided between San Gabriel River and Lakewood Boulevard, and Class III bikeways are provided between Lakewood Boulevard and Terminal Island Highway. In the Mobility Element, Pacific Coast Highway has

been described as a congestion "hot spot" (i.e., a roadway that currently suffers from congestion and will continue in future conditions) between Cherry Avenue and Bellflower Boulevard. The City has identified Pacific Coast Highway as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Lakewood Boulevard (State Route 19 [SR-19]):** Lakewood Boulevard is generally a four- to eight-lane, north-south roadway that is classified in the Mobility Element as a regional corridor (i.e., a roadway designed for integrational and intercommunity mobility). The Mobility Element also identifies Lakewood Boulevard as a transit primary priority area, one that provides for regional transit service. The City has designated Lakewood Boulevard as a regional truck route.

- **7th Street (State Route 22 [SR-22]):** 7th Street is generally a four- to eight-lane, north-south roadway that is classified as a boulevard and characterized in the Mobility Element as a long-distance, medium-speed corridor. Between the termination of the Garden Grove Freeway and the Pacific Coast Highway, 7th Street is part of SR-22. The Mobility Element identifies 7th Street as a pedestrian-priority area between Pacific Avenue and Alamitos Avenue and a transit primary priority area, one that provides for regional transit service. Class II bikeways are provided between West Shoreline Drive and Chestnut Avenue. The Mobility Element describes 7th Street as a current and future congested corridor (i.e., a roadway operating unacceptably and predicted to continue to operate unacceptably [LOS E or F]). The City has identified 7th Street as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between Atlantic Avenue and Alamitos Avenue.

- **Santa Fe Avenue:** Santa Fe Avenue is generally a four- to six-lane, north-south roadway that is classified as a major avenue and defined in the Mobility Element as a major route for the movement of traffic. The Mobility Element identifies Santa Fe Avenue as a pedestrian-priority area and transit secondary priority area, one that provides for local and neighborhood transit service without physical priority treatments. A bikeway is planned for this corridor; however, classification of this bikeway is yet to be determined. This roadway is designated as a truck route appropriate for local delivery. In the Mobility Element, Santa Fe Avenue is described as a congested corridor or a roadway operating unacceptably (i.e., LOS E or F). The City has identified Santa Fe Avenue north of Anaheim Street and south of Willow Street as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Magnolia Avenue:** Magnolia Avenue is generally a two- to four-lane, north-south roadway that is classified as a Neighborhood Connector and defined in the Mobility Element as serving trips generated in the surrounding or adjacent neighborhoods. The Mobility Element identifies Magnolia Avenue between Anaheim Avenue and Harbor Scenic as a transit secondary priority area, one that provides for local and neighborhood transit service without physical priority treatments.

- **Pacific Avenue:** Pacific Avenue is generally a two- to six-lane, north-south roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the

movement of traffic) south of Pacific Coast Highway and as a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers) north of Pacific Coast Highway. The Mobility Element identifies Pacific Avenue as a pedestrian-priority area, a transit secondary priority area (one that provides for local and neighborhood transit service without physical priority treatments) between Pacific Coast Highway and 7th Street, and as a transit primary priority area (one that provides for regional transit service) between 7th Street and Broadway. This roadway is designated as a truck route appropriate for local delivery. Class I and II bikeways are provided along this corridor. In the Mobility Element, Pacific Avenue has been determined as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Long Beach Boulevard:** Long Beach Boulevard is generally a four- to eight-lane, north-south roadway that is classified as a boulevard and is characterized in the Mobility Element as a long-distance, medium-speed corridor. The Mobility Element identifies Long Beach Boulevard as a pedestrian-priority area and transit primary priority area, one that provides for regional transit service. Class III bikeways are proposed for this corridor. This roadway is designated as a regional truck route within Long Beach. In the Mobility Element, Long Beach Boulevard is an Intelligent Transportation System (ITS) corridor between Del Amo Boulevard and Carson Street and between Anaheim Street and Ocean Boulevard. Long Beach Boulevard has been determined as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Atlantic Avenue:** Atlantic Avenue is generally a four- to six-lane, north-south roadway that is classified as a major avenue (defined as serving as a major route for the movement of traffic) in the Mobility Element. The Mobility Element identifies Atlantic Avenue as a pedestrian-priority area and transit primary priority area, one that provides for regional transit service. This roadway has been designated as a truck route appropriate for local delivery. In the Mobility Element, Atlantic Avenue is described as a congested corridor, or a roadway operating unacceptably (i.e., LOS E or F). In the Mobility Element, Atlantic Avenue is an ITS corridor between the SR-91 westbound ramps and Spring Street, between Columbia Street and Willow Street, and between Willow Street and Ocean Boulevard. The City has identified Atlantic Avenue as a roadway with opportunity for street character change to better accommodate the needs of pedestrians, bicyclists, and transit riders between Pacific Coast Highway and 7th Street.

- **Orange Avenue:** Orange Avenue is generally a two- to four-lane, north-south roadway that is classified in the Mobility Element as a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers). Class II bikeways are provided between Bixby Road and 70th Street, and Class III bikeways are provided between Bixby Road and Wardlow Avenue. Class III bikeways are proposed between Wardlow Avenue and East Hill Street, and a Bike Boulevard is proposed between East Hill Street and the Pacific Coast Highway.

- **Alamitos Avenue:** Alamitos Avenue is generally a four- to eight-lane, north-south roadway that is classified as a boulevard and characterized in the Mobility Element as a long-distance, medium-speed corridor. The Mobility Element identifies Alamitos Avenue as a pedestrian-priority area. Class III bikeways are provided along this corridor. This roadway is designated as a

truck route appropriate for local delivery. In the Mobility Element, Alamitos Avenue has been described as a congested corridor (i.e., a roadway operating unacceptably [LOS E or F] and a "hot spot" for congestion). In the Mobility Element, Alamitos Avenue is an ITS corridor between 6th Street and Ocean Boulevard. The City has identified Alamitos Avenue as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Cherry Avenue:** Cherry Avenue is generally a two- to six-lane, north-south roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic) between Pacific Coast Highway and 70th Street, a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers) between Pacific Coast Highway and 7th Street, and a neighborhood connector (defined as serving trips generated in the surrounding or adjacent neighborhoods) between 7th Street and Ocean Boulevard. The Mobility Element identifies Cherry Avenue as a secondary priority transit area, one that provides for local and neighborhood transit service without physical priority treatments. This roadway has been designated as a regional truck route. In the Mobility Element, Cherry Avenue has been described as a congested corridor (i.e., a roadway operating unacceptably [LOS E or F]). The City has identified Cherry Avenue as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Paramount Boulevard:** Paramount Boulevard is generally a four- to six-lane, north-south roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). This roadway has been designated as a regional truck route. Class II bikeways on Paramount Boulevard are provided between Market Street and Artesia Boulevard.

- **Redondo Avenue:** Redondo Avenue is generally a two- to six-lane, north-south roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic) between Pacific Coast Highway and 4th Street, a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers) between 4th Street and Broadway, and a neighborhood connector (defined as serving trips generated in the surrounding or adjacent neighborhoods) between Broadway and Ocean Boulevard. The Mobility Element identifies Redondo Avenue as a pedestrian-priority area. This roadway is designated as a truck route appropriate for local delivery. The City has identified Redondo Avenue as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Ximeno Avenue:** Ximeno Avenue is generally a two- to four-lane, north-south roadway that is classified in the Mobility Element as a neighborhood connector (defined as serving trips generated in the surrounding or adjacent neighborhoods). The Mobility Element identifies Ximeno Avenue as a transit secondary priority area, one that provides for local and neighborhood transit service without physical priority treatments).

- **Park Avenue:** Park Avenue is generally a two- to four-lane, north-south roadway that is classified in the Mobility Element as a neighborhood connector (defined as serving trips generated in the surrounding or adjacent neighborhoods).

- **Los Coyotes Diagonal:** Los Coyotes Diagonal is generally a four- to eight-lane, north-south roadway that is classified in the Mobility Element as a boulevard and characterized as a long-distance, medium-speed corridor. This roadway has been designated as a truck route appropriate for local delivery. Class II bikeways are provided along this corridor.

- **Bellflower Boulevard:** Bellflower Boulevard is generally a four- to eight-lane, north-south roadway that is classified in the Mobility Element as a boulevard and characterized as a long-distance, medium-speed corridor. The Mobility Element identifies Bellflower Boulevard as a pedestrian-priority area between Willow Street and Anaheim Street and as a transit primary priority area (one that provides for regional transit service) between Willow Street and 7th Street. This roadway has been designated as a regional truck route. Class II bikeways are provided between Carson Street and 7th Street along the corridor. In the Mobility Element, Bellflower Boulevard is an ITS corridor between the SR-91 westbound ramps and 29th Street/28th Street and between 27th Street and Los Coyotes Diagonal. The Mobility Element describes Bellflower Boulevard as a congestion "hot spot" and future congested corridor (i.e., a roadway operating unacceptably [LOS E or F]). The City has identified Bellflower Boulevard as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between Atherton Street and Loynes Drive.

- **Studebaker Road:** Studebaker Road is generally a two- to six-lane, north-south roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic) between Spring Street and 2nd Street and as a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers) between Spring Street and Carson Street. The Mobility Element identifies Studebaker Road as a pedestrian-priority area between Spring Street and Willow Street. This roadway has been designated as a truck route appropriate for local delivery. Class II bikeways are provided along this corridor.

- **Norwalk Boulevard:** Norwalk Boulevard is generally a four- to six-lane, north-south roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). This roadway is designated as a regional truck route. Class II bikeways are provided between 226th Street and Wardlow Road

- **Artesia Boulevard:** Artesia Boulevard is generally a four- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). The Mobility Element identifies Artesia Boulevard as a pedestrian-priority area between Long Beach Boulevard and Cherry Avenue and as a transit primary priority area (one that provides for regional transit service) between Susan Road and Atlantic Avenue. This roadway is designated as a truck route appropriate for local delivery. Class II bikeways are proposed along this corridor. The Mobility Element describes Artesia Boulevard as a congested corridor (i.e., a roadway operating unacceptably [LOS E or F]) and a congestion "hot spot" between Long Beach Boulevard and Paramount Boulevard. The City has identified Artesia

Boulevard as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **South Street:** South Street is generally a two- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic) between Cherry Avenue and Lakewood Boulevard, and as a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers) between Atlantic Avenue and Cherry Avenue. This roadway is designated as a regional truck route between Cherry Avenue and Lakewood Boulevard and as a truck route appropriate for local delivery between Locust Avenue and Cherry Avenue. Class II bikeways are proposed along this corridor between Cherry Avenue and Lakewood Boulevard. The City has identified South Street as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between Orange Avenue and Atlantic Avenue.

- **Market Street:** Market Street is generally a two- to four-lane, east-west roadway that is classified in the Mobility Element as a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers). The Mobility Element identifies Market Street as a pedestrian-priority area between Long Beach Boulevard and Atlantic Avenue. This roadway has been designated a truck route appropriate for local delivery between Orange Avenue and Deeboyar Avenue. Class II bikeways are proposed along this corridor. Market Street has been determined as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Del Amo Boulevard:** Del Amo Boulevard is generally a four- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). The Mobility Element identifies Del Amo Boulevard as a transit secondary priority area, one that provides for local and neighborhood transit service without physical priority treatments. Class II bikeways are provided between Atlantic Avenue and Orange Avenue and proposed between Orange Avenue and Paramount Boulevard. In the Mobility Element, Del Amo Boulevard is an ITS corridor west of Atlantic Avenue and east of I-605. The Mobility Element describes Del Amo Boulevard as a congested corridor (i.e., a roadway operating unacceptably [LOS E or F]) and a congestion “hot spot” between Atlantic Avenue and Lakewood Boulevard.

- **Carson Street:** Carson Street is generally a four- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). The Mobility Element identifies Carson Street as a transit secondary priority area, one that provides for local and neighborhood transit service without physical priority treatments. This roadway has been designated as a regional truck route. Class I bikeways are provided between Lakewood Boulevard and the San Gabriel River Freeway, and Class II bikeways are proposed between Atlantic Avenue and Paramount Boulevard. In the Mobility Element, Carson Street is an ITS corridor from Long Beach Boulevard to east of I-605. The Mobility Element describes Carson Street as a congested corridor (i.e., a roadway operating unacceptably [LOS E or F]) and a congestion “hot spot” between Bellflower Boulevard and Los Coyotes Diagonal. The City has identified Carson Street as a roadway with opportunity for street

character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between Long Beach Boulevard and Cherry Avenue.

- **Wardlow Road:** Wardlow Road is generally a two- to four-lane, east-west roadway that is classified in the Mobility Element as a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers). The Mobility Element identifies Wardlow Road as a pedestrian-priority area between Orange Avenue and Cherry Avenue and as a transit secondary priority area (one that provides for local and neighborhood transit service without physical priority treatments) between Cherry Avenue and Santa Fe Avenue. This roadway has been designated as a truck route appropriate for local delivery. Class II bikeways are provided between Clark Avenue and Norwalk Boulevard. In the Mobility Element, Wardlow Road is an ITS corridor between Walnut Avenue and Cherry Avenue and between Clark Avenue and Bellflower Boulevard. The Mobility Element describes Bellflower Boulevard as a future congested corridor, which is a roadway operating unacceptably (i.e., LOS E or F).

- **Spring Street:** Spring Street is generally a four- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). The Mobility Element identifies Spring Street as a pedestrian-priority area between Los Coyotes Diagonal and Palo Verde Avenue. This roadway has been designated as a regional truck route. Class II bikeways are provided between Pacific Avenue and Orange Avenue, and a Bike Boulevard is proposed between Santa Fe Avenue and Pacific Avenue. A bikeway between Orange Avenue and Norwalk Boulevard is planned for this corridor; however, classification of this bikeway is yet to be determined. In the Mobility Element, Spring Street is an ITS corridor between Atlantic Avenue and Temple Avenue and from Redondo Avenue to east of I-605. ITS is proposed between Cherry Avenue and southeast of Redondo Avenue.

- **Willow Street:** Willow Street is generally a four- to eight-lane, east-west roadway that is classified in the Mobility Element as a boulevard and characterized as a long-distance, medium-speed corridor. The Mobility Element identifies Willow Street as a pedestrian-priority area between the Terminal Island Freeway and Orange Avenue, as a transit primary priority area (one that provides for regional transit service) between the Terminal Island Freeway and Long Beach Boulevard, and as a transit secondary priority area (one that provides for local and neighborhood transit service without physical priority treatments) between Long Beach Boulevard and the San Gabriel Freeway. This roadway has been designated as a truck route appropriate for local delivery between the Terminal Island Freeway and the Long Beach Freeway and between Clark Avenue and the San Gabriel River. This roadway has also been designated as a regional truck route between Long Beach Boulevard and Lakewood Boulevard. Class II bikeways are proposed west of Delta Avenue. In the Mobility Element, Willow Street is an ITS corridor between Atlantic Avenue and the I-605 southbound exit. The Mobility Element describes Willow Street as a congestion “hot spot” and future congested corridor (i.e., a roadway predicted to operate unacceptably [LOS E or F]) between Santa Fe Avenue and Redondo Avenue. The City has identified Willow Street as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between the Terminal Island Freeway and Atlantic Avenue.

- **Anaheim Street:** Anaheim Street is generally a four- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). The Mobility Element identifies Anaheim Street as a pedestrian-priority area between Alamitos Avenue and Redondo Avenue and as a transit primary priority area, one that provides for regional transit service. This roadway has been designated as a truck route appropriate for local delivery. Class I bikeways are proposed between Ximeno Avenue and Clark Avenue, and Class II bikeways are provided between Palo Verde Avenue and Studebaker Road. In the Mobility Element, Anaheim Street is an ITS corridor between San Francisco Avenue and Cherry Avenue. The Mobility Element describes Anaheim Street as a congested corridor (i.e., a roadway operating unacceptably [LOS E or F]) and a congestion "hot spot" east of Redondo Avenue. The City has identified Anaheim Street as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between Cherry Avenue and Redondo Avenue.

- **6th Street:** 6th Street is generally a four- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). Class II bikeways are provided between West Shoreline Drive and Chestnut Avenue along this corridor.

- **3rd Street:** 3rd Street is generally a four- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic). Class I bikeways are provided between Golden Avenue and Alamitos Avenue.

- **Broadway:** Broadway is generally a two- to six-lane, east-west roadway that is classified in the Mobility Element as a major avenue (defined as serving as a major route for the movement of traffic) between Main Avenue and Alamitos Avenue, as a minor avenue (defined as providing for the movement of traffic to neighborhood activity centers) between Alamitos Avenue and Redondo Avenue, and as a neighborhood connector (defined as serving trips generated in the surrounding or adjacent neighborhoods) between Redondo Avenue and Park Avenue. The Mobility Element identifies Broadway as a pedestrian-priority area and a transit primary priority area (one that provides for regional transit service) between Pacific Avenue and Long Beach Boulevard. This roadway has been designated as a truck route appropriate for local delivery between Alamitos Avenue and Redondo Avenue. Class I bikeways are provided between Golden Avenue and Alamitos Avenue. The City has identified Broadway as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **Ocean Boulevard:** Ocean Boulevard is generally a four- to eight-lane, north-south roadway that is classified in the Mobility Element as a boulevard and characterized as a long-distance, medium-speed corridor. Ocean Boulevard has also been designated as a scenic route. The Mobility Element identifies Ocean Boulevard as a transit primary priority area, one that provides for regional transit service. This roadway has been designated as a truck route appropriate for local delivery. Ocean Boulevard is a proposed ITS corridor between Biona Court and Livingston Drive. In the Mobility Element, Ocean Boulevard has been described as a congested corridor and "hot spot" (defined as a roadway that currently suffers from congestion and is predicted to

continue in future conditions) east of Redondo Avenue. The City has identified Ocean Boulevard as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between Livingston Drive and Bay Shore Avenue.

- **Livingston Drive:** Livingston Drive is generally a four- to eight-lane, east-west roadway that is classified in the Mobility Element as a boulevard and characterized as a long-distance, medium-speed corridor. Livingston Drive has also been designated as a scenic route. The Mobility Element has identified Livingston Drive as a pedestrian-priority area and a transit primary priority area, one that provides for regional transit service. Livingston Drive is a proposed ITS corridor between Ocean Boulevard and 2nd Street. The City has identified Livingston Drive as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders.

- **2nd Street:** 2nd Street is generally a four- to eight-lane, east-west roadway that is classified in the Mobility Element as a boulevard and characterized as a long-distance, medium-speed corridor. 2nd Street has also been designated as a scenic route. The Mobility Element identifies 2nd Street as a pedestrian-priority area and a transit primary priority area, one that provides for regional transit service. This roadway has been designated as a truck route appropriate for local delivery. Class II bikeways are provided along this corridor. The Mobility Element describes 2nd Street as a congested corridor (i.e., a roadway operating unacceptably [LOS E or F]). The City has identified 2nd Street as a roadway with opportunity for street character change to better accommodate the needs for pedestrians, bicyclists, and transit riders between Marina Drive and Studebaker Road.

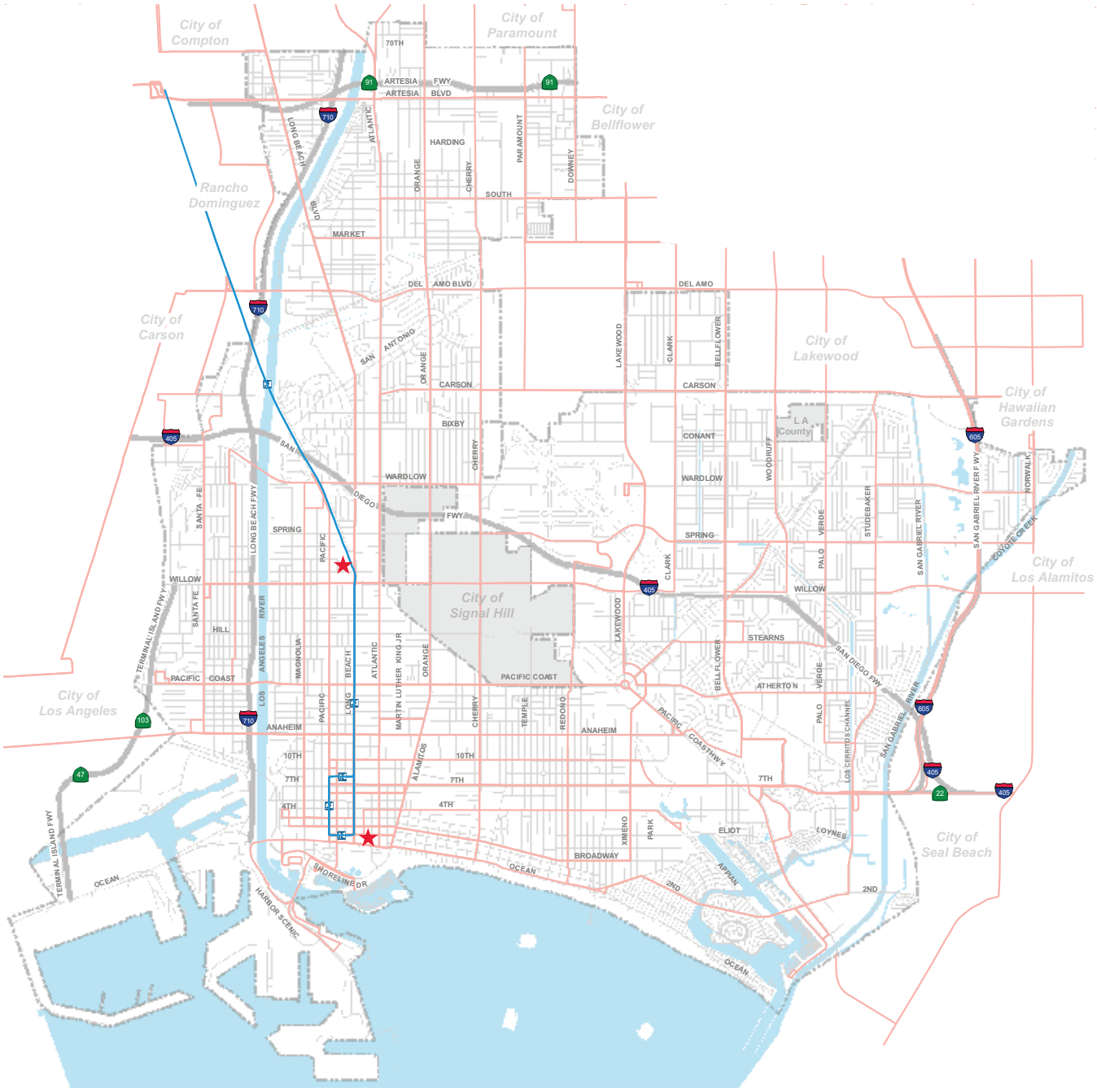
Existing Transit Service

Long Beach is served by a robust network of transit options from multiple operators, including rail, fixed-route bus service, shuttles, and boats. Long Beach has a municipal transit agency, Long Beach Transit (LBT) (which provides 34 fixed-route bus routes), the free Downtown Passport circulator, demand-response transit, the AquaLink water bus between Alamitos Bay Landing and downtown Long Beach, and the AquaBus water taxi between marinas and docks along the downtown waterfront.

Other transit operators in Long Beach include the Orange County Transportation Authority (OCTA), Torrance Transit, the Los Angeles Department of Transportation (LADOT), and Metro. Metro operates fixed-route local and express bus service on a limited number of routes within Long Beach. Metro also operates the Blue Line passenger rail service between downtown Long Beach and downtown Los Angeles. The Blue Line connects to the larger and expanding Metro Rail system, providing a convenient transit link between Long Beach and the larger metropolitan region. Figure 7 illustrates the existing transit network within Long Beach.

Existing Intersection LOS Analysis

For a few of the study intersections, traffic volume data had been recently collected that could also be used for this traffic analysis. Depending on the age of the traffic data, an ambient traffic growth rate of 1 percent per year was added to estimate 2018 traffic volume. For most of the study intersections, vehicle turning volumes were collected during the peak morning (7:00 a.m.–9:00 a.m.)



LSA

FIGURE 7

Legend

- Metro Rail Stations
- Metro Rail
- Bus Routes (includes LB Transit, Metro, and OCTA)
- Multimodal Hub

N

Long Beach General Plan Land Use and Urban Design Elements

Existing Transit Service

SOURCE: City of Long Beach, Mobility Element

I:\CLB1804\G\Traffic\Existing Transit.cdr (4/1/2019)

This page intentionally left blank

and evening (4:00 p.m.–6:00 p.m.) commute periods. Peak-hour intersection turn volumes were surveyed on a typical weekday (i.e., Wednesday, May 9, 2018; Thursday, May 10, 2018; Wednesday, May 23, 2018; and Thursday, November 1, 2018). These volumes were taken in 15-minute increments and then totaled as hourly volumes, which is the standard procedure for volume data collection. Appendix A provides the traffic volume data sheets.

Table A summarizes the results of the existing a.m. and p.m. peak-hour LOS analysis for the study area intersections. Existing condition analysis worksheets are provided in Appendix B. As Table A indicates, while most intersections operate at a satisfactory LOS (i.e., LOS D or better) in the a.m. and p.m. peak hours, 20 of the sampled intersections (approximately 17 percent) operate at unsatisfactory LOS E or F during one or both peak hours.

GENERAL PLAN HORIZON YEAR (2040) NO PROJECT

As mentioned previously, State agencies forecast regional demographic growth and the MPO (i.e., SCAG) uses the data provided by the State for the RTP/SCS process. As part of the RTP/SCS, SCAG updates and validates the RTP Travel Demand Model. For the 2016 RTP, demographic data in Long Beach was allocated to the Traffic Analysis Zones (TAZs) within the City according to the currently adopted Land Use Element. LSA compared the RTP 2040 traffic projections to the RTP Existing Base Year traffic projections and calculated an annual growth rate. In some instances, the annual growth rate for Long Beach provided in the Los Angeles County CMP was higher. LSA applied the higher annual growth rate to the Existing (2018) traffic volumes at each study area intersection to calculate General Plan Horizon Year (2040) No Project traffic volumes. This scenario is included for informational purposes to help illustrate how the proposed project affects conditions in the horizon year. For the purposes of CEQA, however, project conditions are compared to existing conditions.

Table B summarizes the results of the General Plan Horizon Year (2040) No Project a.m. and p.m. peak-hour LOS analysis for the study area intersections. This condition is included in the analysis worksheets in Appendix B. As Table B indicates, 52 of the sampled intersections (approximately 43 percent) are projected to operate at unsatisfactory LOS E or F during one or both peak hours.

GENERAL PLAN ANTICIPATED BUILDOUT (2040) WITH PROPOSED PROJECT

The RTP Travel Demand Model was modified to reflect the changes included in the proposed Land Use Element. Although the projections of population and employment growth are not affected by the proposed Land Use Element, the number of housing units is anticipated to increase. The proposed Land Use Element will also affect the location of future land uses.

A detailed description of the methodology of calculating changes to socioeconomic data for each Long Beach TAZ in the RTP Travel Demand Model is provided in the *Methodology for Calculating Growth in Socioeconomic Data Associated with the Long Beach General Plan Land Use Element* memorandum (LSA 2019). In summary, previously calculated changes in demographic data disclosed in previous Specific Plan documents (e.g., Downtown Plan, Midtown Specific Plan, Douglas Park Rezone Project, and Southeast Area Specific Plan) were accounted for, the remaining new employment outside of these areas was allocated according to existing employment density, the remaining new housing outside of these areas was allocated according to planned density levels, and population was allocated proportionate to the

Table A: Existing Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
1	Avalon Boulevard/Pacific Coast Hwy	Caltrans	0.75	C	0.72	C
2	Avalon Boulevard/Anaheim Street	Carson	0.56	A	0.62	B
3	Wilmington Avenue/Sepulveda Boulevard	Carson	0.70	B	0.67	B
4	Wilmington Avenue/223rd Street	Carson	>1.00	F	1.00	E
5	Terminal Island Freeway/Willow Street	Long Beach	0.40	A	0.56	A
6	Santa Fe Avenue/Wardlow Road	Long Beach	0.57	A	0.72	C
7	Santa Fe Avenue/Willow Street	Long Beach	0.80	C	0.89	D
8	Santa Fe Avenue/Pacific Coast Hwy	Caltrans	0.76	C	0.77	C
9	Santa Fe Avenue/Anaheim Street	Long Beach	0.48	A	0.55	A
10	I-710/SR-1 Cloverleaf WB	Long Beach	N/A[1]		N/A[1]	
11	I-710/SR-1 Cloverleaf EB	Long Beach	N/A[1]		N/A[1]	
12	Magnolia Avenue/Ocean Boulevard	Long Beach	0.65	B	0.60	A
13	Pacific Avenue/Pacific Coast Hwy	Caltrans	0.64	B	0.75	C
14	Pacific Avenue/Anaheim Street	Long Beach	0.65	B	0.74	C
15	Pacific Avenue/7th Street	Long Beach	0.50	A	0.38	A
16	Pacific Avenue/6th Street	Long Beach	0.35	A	0.65	B
17	Pacific Avenue/3rd Street	Long Beach	0.52	A	0.38	A
18	Pacific Avenue/Broadway	Long Beach	0.37	A	0.55	A
19	Pacific Avenue/Ocean Boulevard	Long Beach	>1.00	F	0.87	D
20	Long Beach Boulevard/Alondra Boulevard	Compton	0.69	B	0.87	D
21	Long Beach Boulevard/Artesia Boulevard	Long Beach	0.74	C	0.81	D
22	Long Beach Boulevard/Market Street	Long Beach	0.64	B	0.79	C
23	Long Beach Boulevard/Del Amo Boulevard	Long Beach	0.82	D	0.70	B
24	Long Beach Boulevard/San Antonio Drive	Long Beach	0.60	A	0.79	C
25	Long Beach Boulevard/Wardlow Road	Long Beach	0.89	D	0.91	E
26	Long Beach Boulevard/Spring Street	Long Beach	>1.00	F	>1.00	F
27	Long Beach Boulevard/Willow Street	Long Beach	0.75	C	0.78	C
28	Long Beach Boulevard/Pacific Coast Hwy	Caltrans	0.68	B	0.75	C
29	Long Beach Boulevard/Anaheim Street	Long Beach	0.56	A	0.68	B
30	Long Beach Boulevard/7th Street	Long Beach	>1.00	F	0.79	C
31	Long Beach Boulevard/6th Street	Long Beach	0.39	A	0.64	B
32	Long Beach Boulevard/3rd Street	Long Beach	0.52	A	0.40	A
33	Long Beach Boulevard/Broadway	Long Beach	0.41	A	0.61	B
34	Long Beach Boulevard/Ocean Boulevard	Long Beach	0.60	A	0.51	A
35	Atlantic Avenue/Alondra Boulevard	Compton	0.80	C	0.76	C
36	Atlantic Avenue/SR-91 WB Ramps	Long Beach	0.60	A	0.53	A
37	Atlantic Avenue/SR-91 EB Ramps	Long Beach	0.48	A	0.58	A
38	Atlantic Avenue/Artesia Boulevard	Long Beach	0.79	C	0.86	D
39	Atlantic Avenue/South Street	Long Beach	0.52	A	0.72	C
40	Atlantic Avenue/Del Amo Boulevard	Long Beach	0.77	C	0.79	C
41	Atlantic Avenue/33rd Street	Caltrans	0.48	A	0.72	C
42	Atlantic Avenue/I-405 EB Ramps	Caltrans	0.49	A	0.55	A
43	Atlantic Avenue/Willow Street	Long Beach	0.68	B	0.79	C
44	Atlantic Avenue/Pacific Coast Hwy	Caltrans	0.68	B	0.73	C
45	Atlantic Avenue/Anaheim Street	Long Beach	0.76	C	0.81	D
46	Atlantic Avenue/7th Street	Long Beach	0.70	B	0.55	A
47	Atlantic Avenue/6th Street	Long Beach	0.40	A	0.61	B
48	Atlantic Avenue/3rd Street	Long Beach	0.56	A	0.35	A

Table A: Existing Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
49	Atlantic Avenue/Broadway	Long Beach	0.28	A	0.62	B
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.57	A	0.52	A
51	Orange Avenue/Wardlow Road	Long Beach	0.75	C	0.81	D
52	Orange Avenue/Pacific Coast Hwy	Caltrans	0.65	B	0.73	C
53	Alamitos Avenue/Anaheim Street	Long Beach	0.84	D	0.88	D
54	Alamitos Avenue/7th Street	Long Beach	0.80	C	0.73	C
55	Alamitos Avenue/6th Street	Long Beach	0.78	C	>1.00	F
56	Alamitos Avenue/3rd Street	Long Beach	0.86	D	0.59	A
57	Alamitos Avenue/Broadway	Long Beach	0.68	B	0.82	D
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.79	C	0.73	C
59	Cherry Avenue/Artesia Boulevard	Long Beach	0.82	D	0.87	D
60	Cherry Avenue/Market Street	Long Beach	0.75	C	0.90	D
61	Cherry Avenue/Del Amo Boulevard	Long Beach/Lakewood	0.77	C	0.85	D
62	Cherry Avenue/Carson Street	Long Beach	0.65	B	0.81	D
63	Cherry Avenue/Wardlow Road	Long Beach	0.78	C	0.89	D
64	Cherry Avenue/Willow Street	Signal Hill	0.71	C	0.81	D
65	Cherry Avenue/Pacific Coast Hwy	Caltrans	0.77	C	0.74	C
66	Cherry Avenue/7th Street	Long Beach	0.80	C	0.80	C
67	Paramount Boulevard/Artesia Boulevard	Long Beach	0.67	B	0.67	B
68	Paramount Boulevard/South Street	Long Beach	0.66	B	0.84	D
69	Paramount Boulevard/Del Amo Boulevard	Lakewood	0.84	D	0.92	E
70	Paramount Boulevard/Carson Street	Lakewood	0.64	B	0.86	D
71	Downey Avenue/Alondra Boulevard	Paramount	0.77	C	0.82	D
72	Redondo Avenue/Spring Street	Long Beach	0.63	B	0.69	B
73	Redondo Avenue/Willow Street	Long Beach	0.70	B	0.74	C
74	Redondo Avenue/Pacific Coast Hwy	Caltrans	0.97	E	0.98	E
75	Redondo Avenue/Anaheim Street	Long Beach	0.87	D	0.94	E
76	Redondo Avenue/7th Street	Long Beach	0.97	E	0.91	E
77	Redondo Avenue/3rd Street	Long Beach	0.48	A	0.52	A
78	Redondo Avenue/Ocean Boulevard	Long Beach	0.58	A	0.68	B
79	Lakewood Boulevard/Del Amo Boulevard	Long Beach/Lakewood	0.89	D	0.97	E
80	Lakewood Boulevard/Carson Street	Long Beach/Lakewood	0.63	B	0.77	C
81	Lakewood Boulevard/Spring Street	Long Beach	0.82	D	0.81	D
82	Lakewood Boulevard/I-405 WB Ramps	Caltrans	0.41	A	0.46	A
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	Caltrans	0.45	A	0.43	A
84	Lakewood Boulevard/Willow Street	Long Beach	0.93	E	0.95	E
85	Ximeno Avenue/Pacific Coast Hwy	Caltrans	0.71	C	0.80	C
86	Ximeno Avenue/7th Street	Long Beach	0.92	E	0.85	D
87	Ximeno Avenue/4th Street	Long Beach	0.64	B	0.74	C
88	Park Avenue/7th Street	Long Beach	0.93	E	0.90	D
89	Park Avenue/4th Street	Long Beach	0.74	C	0.76	C
90	Livingston Drive/2nd Street	Long Beach	0.70	B	0.62	B
91	Pacific Coast Hwy/Anaheim Street	Caltrans	0.70	B	0.80	C
92	Pacific Coast Hwy/7th Street	Caltrans	0.95	E	0.96	E
93	Bellflower Boulevard/Del Amo Boulevard	Long Beach/Lakewood	0.82	D	>1.00	F

Table A: Existing Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
94	Bellflower Boulevard/Carson Street	Long Beach/Lakewood	0.79	C	0.93	E
95	Bellflower Boulevard/Spring Street	Long Beach	0.76	C	0.79	C
96	Bellflower Boulevard/Los Coyotes Diagonal	Long Beach	0.65	B	0.82	D
97	Bellflower Boulevard/Atherton Street	Long Beach	0.79	C	0.80	C
98	Bellflower Boulevard/7th Street	Long Beach	0.85	D	0.80	C
99	Bellflower Boulevard/Pacific Coast Hwy	Caltrans	0.71	C	0.79	C
100	Pacific Coast Hwy/2nd Street	Caltrans	0.93	E	0.87	D
101	1st Street/Marina Drive	Long Beach	0.22	A	0.27	A
102	Los Coyotes Diagonal/Spring Street	Long Beach	0.70	B	0.74	C
103	West Campus Drive/7th Street	Long Beach	0.72	C	0.72	C
104	East Campus Road/7th Street	Long Beach	0.77	C	0.80	C
105	Palo Verde Avenue/Wardlow Road	Long Beach	0.50	A	0.65	B
106	Palo Verde Avenue/Anaheim Street	Long Beach	0.51	A	0.75	C
107	Los Coyotes Diagonal/Carson Street	Long Beach/Lakewood	0.71	C	0.78	C
108	Studebaker Road/Spring Street	Long Beach	0.47	A	0.79	C
109	Studebaker Road/Willow Street	Long Beach	0.77	C	0.87	D
110	7th Street/College Park Drive	Long Beach	0.77	C	>1.00	F
111	Studebaker Road/2nd Street	Long Beach	0.82	D	0.88	D
112	I-605 SB Ramps/Carson Street	Caltrans	0.56	A	0.68	B
113	I-605 NB Ramps/Carson Street	Caltrans	0.56	A	0.60	A
114	Norwalk Boulevard/Carson Street	Hawaiian Gardens	0.77	C	0.83	D
115	Norwalk Boulevard/Cerritos Avenue	Los Alamitos	0.78	C	0.90	D
116	Los Alamitos Boulevard/Katella Avenue	Garden Grove	0.88	D	0.88	D
117	Seal Beach Boulevard/Westminster Road	Seal Beach	0.80	C	0.93	E
118	Atlantic Avenue/I-405 WB Ramps	Caltrans	0.37	A	0.48	A
119	I-710/Anaheim Street Cloverleaf WB	Caltrans	N/A[1]		N/A[1]	
120	I-710/Anaheim Street Cloverleaf EB	Caltrans	N/A[1]		N/A[1]	

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per the City's TIA guidelines.
[1] Intersection is not stop controlled

Caltrans = California Department of Transportation
EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

Table B: General Plan Horizon Year (2040) No Project Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
1	Avalon Boulevard/Pacific Coast Hwy	Caltrans	0.85	D	0.81	D
2	Avalon Boulevard/Anaheim Street	Carson	0.59	A	0.68	B
3	Wilmington Avenue/Sepulveda Boulevard	Carson	0.79	C	0.78	C
4	Wilmington Avenue/223rd Street	Carson	>1.00	F	>1.00	F
5	Terminal Island Freeway/Willow Street	Long Beach	0.48	A	0.68	B
6	Santa Fe Avenue/Wardlow Road	Long Beach	0.62	B	0.79	C
7	Santa Fe Avenue/Willow Street	Long Beach	0.85	D	1.00	E
8	Santa Fe Avenue/Pacific Coast Hwy	Caltrans	0.86	D	0.87	D
9	Santa Fe Avenue/Anaheim Street	Long Beach	0.54	A	0.61	B
10	I-710/SR-1 Cloverleaf WB	Long Beach	N/A[1]		N/A[1]	
11	I-710/SR-1 Cloverleaf EB	Long Beach	N/A[1]		N/A[1]	
12	Magnolia Avenue/Ocean Boulevard	Long Beach	0.75	C	0.68	B
13	Pacific Avenue/Pacific Coast Hwy	Caltrans	0.71	C	0.84	D
14	Pacific Avenue/Anaheim Street	Long Beach	0.73	C	0.84	D
15	Pacific Avenue/7th Street	Long Beach	0.55	A	0.41	A
16	Pacific Avenue/6th Street	Long Beach	0.37	A	0.73	C
17	Pacific Avenue/3rd Street	Long Beach	0.57	A	0.42	A
18	Pacific Avenue/Broadway	Long Beach	0.41	A	0.62	B
19	Pacific Avenue/Ocean Boulevard	Long Beach	>1.00	F	0.94	E
20	Long Beach Boulevard/Alondra Boulevard	Compton	0.77	C	0.97	E
21	Long Beach Boulevard/Artesia Boulevard	Long Beach	0.83	D	0.93	E
22	Long Beach Boulevard/Market Street	Long Beach	0.69	B	0.87	D
23	Long Beach Boulevard/Del Amo Boulevard	Long Beach	0.93	E	0.79	C
24	Long Beach Boulevard/San Antonio Drive	Long Beach	0.68	B	0.89	D
25	Long Beach Boulevard/Wardlow Road	Long Beach	0.98	E	>1.00	F
26	Long Beach Boulevard/Spring Street	Long Beach	>1.00	F	>1.00	F
27	Long Beach Boulevard/Willow Street	Long Beach	0.85	D	0.88	D
28	Long Beach Boulevard/Pacific Coast Hwy	Caltrans	0.78	C	0.84	D
29	Long Beach Boulevard/Anaheim Street	Long Beach	0.63	B	0.77	C
30	Long Beach Boulevard/7th Street	Long Beach	>1.00	F	0.81	D
31	Long Beach Boulevard/6th Street	Long Beach	0.42	A	0.76	C
32	Long Beach Boulevard/3rd Street	Long Beach	0.57	A	0.44	A
33	Long Beach Boulevard/Broadway	Long Beach	0.49	A	0.69	B
34	Long Beach Boulevard/Ocean Boulevard	Long Beach	0.63	B	0.56	A
35	Atlantic Avenue/Alondra Boulevard	Compton	0.90	D	0.87	D
36	Atlantic Avenue/SR-91 WB Ramps	Long Beach	0.66	B	0.59	A
37	Atlantic Avenue/SR-91 EB Ramps	Long Beach	0.54	A	0.65	B
38	Atlantic Avenue/Artesia Boulevard	Long Beach	0.87	D	0.98	E
39	Atlantic Avenue/South Street	Long Beach	0.59	A	0.80	C
40	Atlantic Avenue/Del Amo Boulevard	Long Beach	0.88	D	0.90	D
41	Atlantic Avenue/33rd Street	Caltrans	0.50	A	0.84	D
42	Atlantic Avenue/I-405 EB Ramps	Caltrans	0.53	A	0.61	B
43	Atlantic Avenue/Willow Street	Long Beach	0.79	C	0.87	D
44	Atlantic Avenue/Pacific Coast Hwy	Caltrans	0.77	C	0.85	D
45	Atlantic Avenue/Anaheim Street	Long Beach	0.88	D	0.94	E
46	Atlantic Avenue/7th Street	Long Beach	0.78	C	0.59	A
47	Atlantic Avenue/6th Street	Long Beach	0.49	A	0.66	B

Table B: General Plan Horizon Year (2040) No Project Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
48	Atlantic Avenue/3rd Street	Long Beach	0.63	B	0.41	A
49	Atlantic Avenue/Broadway	Long Beach	0.30	A	0.66	B
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.62	B	0.54	A
51	Orange Avenue/Wardlow Road	Long Beach	0.82	D	0.91	E
52	Orange Avenue/Pacific Coast Hwy	Caltrans	0.71	C	0.83	D
53	Alamitos Avenue/Anaheim Street	Long Beach	0.94	E	1.00	E
54	Alamitos Avenue/7th Street	Long Beach	0.92	E	0.83	D
55	Alamitos Avenue/6th Street	Long Beach	>1.00	F	>1.00	F
56	Alamitos Avenue/3rd Street	Long Beach	0.96	E	0.92	E
57	Alamitos Avenue/Broadway	Long Beach	0.84	D	>1.00	F
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.85	D	0.79	C
59	Cherry Avenue/Artesia Boulevard	Long Beach	0.92	E	0.99	E
60	Cherry Avenue/Market Street	Long Beach	0.88	D	>1.00	F
61	Cherry Avenue/Del Amo Boulevard	Long Beach/Lakewood	0.87	D	0.97	E
62	Cherry Avenue/Carson Street	Long Beach	0.73	C	0.92	E
63	Cherry Avenue/Wardlow Road	Long Beach	0.86	D	0.97	E
64	Cherry Avenue/Willow Street	Signal Hill	0.81	D	0.92	E
65	Cherry Avenue/Pacific Coast Hwy	Caltrans	0.88	D	0.83	D
66	Cherry Avenue/7th Street	Long Beach	0.92	E	0.90	D
67	Paramount Boulevard/Artesia Boulevard	Long Beach	0.76	C	0.75	C
68	Paramount Boulevard/South Street	Long Beach	0.76	C	0.96	E
69	Paramount Boulevard/Del Amo Boulevard	Lakewood	0.96	E	>1.00	F
70	Paramount Boulevard/Carson Street	Lakewood	0.71	C	0.95	E
71	Downey Avenue/Alondra Boulevard	Paramount	0.88	D	0.92	E
72	Redondo Avenue/Spring Street	Long Beach	0.70	B	0.79	C
73	Redondo Avenue/Willow Street	Long Beach	0.78	C	0.84	D
74	Redondo Avenue/Pacific Coast Hwy	Caltrans	>1.00	F	>1.00	F
75	Redondo Avenue/Anaheim Street	Long Beach	0.99	E	>1.00	F
76	Redondo Avenue/7th Street	Long Beach	>1.00	F	>1.00	F
77	Redondo Avenue/3rd Street	Long Beach	0.54	A	0.58	A
78	Redondo Avenue/Ocean Boulevard	Long Beach	0.60	A	0.77	C
79	Lakewood Boulevard/Del Amo Boulevard	Long Beach/Lakewood	>1.00	F	>1.00	F
80	Lakewood Boulevard/Carson Street	Long Beach/Lakewood	0.72	C	0.88	D
81	Lakewood Boulevard/Spring Street	Long Beach	0.93	E	0.91	E
82	Lakewood Boulevard/I-405 WB Ramps	Caltrans	0.46	A	0.51	A
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	Caltrans	0.50	A	0.48	A
84	Lakewood Boulevard/Willow Street	Long Beach	>1.00	F	>1.00	F
85	Ximeno Avenue/Pacific Coast Hwy	Caltrans	0.80	C	0.92	E
86	Ximeno Avenue/7th Street	Long Beach	>1.00	F	0.96	E
87	Ximeno Avenue/4th Street	Long Beach	0.72	C	0.81	D
88	Park Avenue/7th Street	Long Beach	>1.00	F	>1.00	F
89	Park Avenue/4th Street	Long Beach	0.79	C	0.85	D
90	Livingston Drive/2nd Street	Long Beach	0.80	C	0.65	B
91	Pacific Coast Hwy/Anaheim Street	Caltrans	0.99	E	0.91	E

Table B: General Plan Horizon Year (2040) No Project Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
92	Pacific Coast Hwy/7th Street	Caltrans	>1.00	F	>1.00	F
93	Bellflower Boulevard/Del Amo Boulevard	Long Beach/Lakewood	0.93	E	>1.00	F
94	Bellflower Boulevard/Carson Street	Long Beach/Lakewood	0.88	D	>1.00	F
95	Bellflower Boulevard/Spring Street	Long Beach	0.90	D	0.90	D
96	Bellflower Boulevard/Los Coyotes Diagonal	Long Beach	0.70	B	0.88	D
97	Bellflower Boulevard/Atherton Street	Long Beach	0.91	E	0.91	E
98	Bellflower Boulevard/7th Street	Long Beach	0.93	E	0.88	D
99	Bellflower Boulevard/Pacific Coast Hwy	Caltrans	0.80	C	0.90	D
100	Pacific Coast Hwy/2nd Street	Caltrans	>1.00	F	>1.00	F
101	1st Street/Marina Drive	Long Beach	0.24	A	0.29	A
102	Los Coyotes Diagonal/Spring Street	Long Beach	0.75	C	0.82	D
103	West Campus Drive/7th Street	Long Beach	0.80	C	0.82	D
104	East Campus Road/7th Street	Long Beach	0.89	D	0.93	E
105	Palo Verde Avenue/Wardlow Road	Long Beach	0.54	A	0.73	C
106	Palo Verde Avenue/Anaheim Street	Long Beach	0.56	A	0.85	D
107	Los Coyotes Diagonal/Carson Street	Long Beach/Lakewood	0.78	C	0.88	D
108	Studebaker Road/Spring Street	Long Beach	0.54	A	0.89	D
109	Studebaker Road/Willow Street	Long Beach	0.87	D	1.00	E
110	7th Street/College Park Drive	Long Beach	0.86	D	>1.00	F
111	Studebaker Road/2nd Street	Long Beach	0.95	E	>1.00	F
112	I-605 SB Ramps/Carson Street	Caltrans	0.64	B	0.89	D
113	I-605 NB Ramps/Carson Street	Caltrans	0.68	B	0.74	C
114	Norwalk Boulevard/Carson Street	Hawaiian Gardens	0.87	D	0.94	E
115	Norwalk Boulevard/Cerritos Avenue	Los Alamitos	0.88	D	>1.00	F
116	Los Alamitos Boulevard/Katella Avenue	Garden Grove	>1.00	F	1.00	E
117	Seal Beach Boulevard/Westminster Road	Seal Beach	0.95	E	>1.00	F
118	Atlantic Avenue/I-405 WB Ramps	Caltrans	0.38	A	0.50	A
119	I-710/Anaheim Street Cloverleaf WB	Caltrans	N/A[1]		N/A[1]	
120	I-710/Anaheim Street Cloverleaf EB	Caltrans	N/A[1]		N/A[1]	

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per the City's TIA guidelines.
[1] Intersection is not stop controlled

Caltrans = California Department of Transportation
EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

new housing. The RTP Travel Demand Model was re-run with these changes to housing, population, and employment projections in each of the City's TAZs.

LSA then determined how future traffic volumes would be altered by changes to the location of demographic data and generated General Plan Anticipated Buildout (2040) With Proposed Project traffic volumes.

Table C summarizes the results of the General Plan Horizon Year (2040) No Project a.m. and p.m. peak-hour LOS analysis for the study area intersections. This condition is included in the analysis worksheets in Appendix B. As Table C indicates, 48 of the sampled intersections (40 percent) are projected to operate at unsatisfactory LOS E or F during one or both peak hours.

PROJECT IMPACTS

Demographic trends such as population and employment growth are forecast to occur whether or not the proposed Land Use and Urban Design Elements are adopted. This has been shown to be true in Long Beach, where overcrowding resulted from population increase occurring even without a sufficient housing increase to support it. As is required by CEQA, however, the traffic conditions in the future with the Land Use and Urban Design Elements are compared to existing conditions. Table D provides that comparison.

As Table D shows, the traffic volume increase between Existing (2018) and General Plan Anticipated Buildout (2040) With the Proposed Project is considered significant at 48 of the 120 intersections included in the study area (40 percent). The intersections significantly impacted by the proposed project are:

4. Wilmington Avenue/223rd Street
7. Santa Fe Avenue/Willow Street
19. Pacific Avenue/Ocean Boulevard
20. Long Beach Boulevard/Alondra Boulevard
21. Long Beach Boulevard/Artesia Boulevard
25. Long Beach Boulevard/Wardlow Road
26. Long Beach Boulevard/Spring Street
30. Long Beach Boulevard/7th Street
38. Atlantic Avenue/Artesia Boulevard
43. Atlantic Avenue/Willow Street
51. Orange Avenue/Wardlow Road
53. Alamitos Avenue/Anaheim Street
54. Alamitos Avenue/7th Street
55. Alamitos Avenue/6th Street
56. Alamitos Avenue/3rd Street
57. Alamitos Avenue/Broadway
59. Cherry Avenue/Artesia Boulevard
60. Cherry Avenue/Market Street
61. Cherry Avenue/Del Amo Boulevard
62. Cherry Avenue/Carson Street
66. Cherry Avenue/7th Street
68. Paramount Boulevard/South Street
69. Paramount Boulevard/Del Amo Boulevard
70. Paramount Boulevard/Carson Street
71. Downey Avenue/Alondra Boulevard
72. Redondo Avenue/Spring Street
74. Redondo Avenue/Pacific Coast Highway
75. Redondo Avenue/Anaheim Street
76. Redondo Avenue/7th Street
79. Lakewood Boulevard/Del Amo Boulevard
81. Lakewood Boulevard/Spring Street
84. Lakewood Boulevard/Willow Street
86. Ximeno Avenue/7th Street
88. Park Avenue/7th Street
91. Pacific Coast Hwy/Anaheim Street
92. Pacific Coast Highway/7th Street
93. Bellflower Boulevard/Del Amo Boulevard
94. Bellflower Boulevard/Carson Street
98. Bellflower Boulevard/7th Street
100. Pacific Coast Highway/2nd Street
104. East Campus Road/7th Street
109. Studebaker Road/Willow Street
110. 7th Street/College Park Drive
111. Studebaker Road/2nd Street
114. Norwalk Boulevard/Carson Street
115. Norwalk Boulevard/Cerritos Avenue
116. Los Alamitos Boulevard/Katella Avenue
117. Seal Beach Boulevard/Westminster Road

Table C: General Plan Anticipated Buildout (2040) With Proposed Project Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
1	Avalon Boulevard/Pacific Coast Hwy	Caltrans	0.85	D	0.81	D
2	Avalon Boulevard/Anaheim Street	Carson	0.59	A	0.67	B
3	Wilmington Avenue/Sepulveda Boulevard	Carson	0.79	C	0.78	C
4	Wilmington Avenue/223rd Street	Carson	>1.00	F	>1.00	F
5	Terminal Island Freeway/Willow Street	Long Beach	0.49	A	0.67	B
6	Santa Fe Avenue/Wardlow Road	Long Beach	0.63	B	0.78	C
7	Santa Fe Avenue/Willow Street	Long Beach	0.91	E	0.98	E
8	Santa Fe Avenue/Pacific Coast Hwy	Caltrans	0.86	D	0.87	D
9	Santa Fe Avenue/Anaheim Street	Long Beach	0.56	A	0.63	B
10	I-710/SR-1 Cloverleaf WB	Long Beach	N/A[1]		N/A[1]	
11	I-710/SR-1 Cloverleaf EB	Long Beach	N/A[1]		N/A[1]	
12	Magnolia Avenue/Ocean Boulevard	Long Beach	0.74	C	0.68	B
13	Pacific Avenue/Pacific Coast Hwy	Caltrans	0.74	C	0.81	D
14	Pacific Avenue/Anaheim Street	Long Beach	0.73	C	0.84	D
15	Pacific Avenue/7th Street	Long Beach	0.55	A	0.41	A
16	Pacific Avenue/6th Street	Long Beach	0.37	A	0.73	C
17	Pacific Avenue/3rd Street	Long Beach	0.57	A	0.42	A
18	Pacific Avenue/Broadway	Long Beach	0.41	A	0.62	B
19	Pacific Avenue/Ocean Boulevard	Long Beach	>1.00	F	0.95	E
20	Long Beach Boulevard/Alondra Boulevard	Compton	0.77	C	0.97	E
21	Long Beach Boulevard/Artesia Boulevard	Long Beach	0.80	C	0.93	E
22	Long Beach Boulevard/Market Street	Long Beach	0.68	B	0.88	D
23	Long Beach Boulevard/Del Amo Boulevard	Long Beach	0.90	D	0.76	C
24	Long Beach Boulevard/San Antonio Drive	Long Beach	0.68	B	0.89	D
25	Long Beach Boulevard/Wardlow Road	Long Beach	0.98	E	>1.00	F
26	Long Beach Boulevard/Spring Street	Long Beach	>1.00	F	>1.00	F
27	Long Beach Boulevard/Willow Street	Long Beach	0.85	D	0.89	D
28	Long Beach Boulevard/Pacific Coast Hwy	Caltrans	0.76	C	0.85	D
29	Long Beach Boulevard/Anaheim Street	Long Beach	0.63	B	0.77	C
30	Long Beach Boulevard/7th Street	Long Beach	>1.00	F	0.81	D
31	Long Beach Boulevard/6th Street	Long Beach	0.44	A	0.76	C
32	Long Beach Boulevard/3rd Street	Long Beach	0.57	A	0.45	A
33	Long Beach Boulevard/Broadway	Long Beach	0.48	A	0.69	B
34	Long Beach Boulevard/Ocean Boulevard	Long Beach	0.63	B	0.55	A
35	Atlantic Avenue/Alondra Boulevard	Compton	0.87	D	0.87	D
36	Atlantic Avenue/SR-91 WB Ramps	Long Beach	0.64	B	0.59	A
37	Atlantic Avenue/SR-91 EB Ramps	Long Beach	0.54	A	0.65	B
38	Atlantic Avenue/Artesia Boulevard	Long Beach	0.88	D	0.98	E
39	Atlantic Avenue/South Street	Long Beach	0.59	A	0.80	C
40	Atlantic Avenue/Del Amo Boulevard	Long Beach	0.88	D	0.90	D
41	Atlantic Avenue/33rd Street	Caltrans	0.55	A	0.78	C
42	Atlantic Avenue/I-405 EB Ramps	Caltrans	0.55	A	0.61	B
43	Atlantic Avenue/Willow Street	Long Beach	0.75	C	0.91	E
44	Atlantic Avenue/Pacific Coast Hwy	Caltrans	0.78	C	0.87	D

Table C: General Plan Anticipated Buildout (2040) With Proposed Project Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
45	Atlantic Avenue/Anaheim Street	Long Beach	0.84	D	0.89	D
46	Atlantic Avenue/7th Street	Long Beach	0.78	C	0.62	B
47	Atlantic Avenue/6th Street	Long Beach	0.49	A	0.66	B
48	Atlantic Avenue/3rd Street	Long Beach	0.62	B	0.42	A
49	Atlantic Avenue/Broadway	Long Beach	0.30	A	0.67	B
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.63	B	0.55	A
51	Orange Avenue/Wardlow Road	Long Beach	0.85	D	0.91	E
52	Orange Avenue/Pacific Coast Hwy	Caltrans	0.72	C	0.83	D
53	Alamitos Avenue/Anaheim Street	Long Beach	0.94	E	1.00	E
54	Alamitos Avenue/7th Street	Long Beach	0.92	E	0.84	D
55	Alamitos Avenue/6th Street	Long Beach	>1.00	F	>1.00	F
56	Alamitos Avenue/3rd Street	Long Beach	0.95	E	0.91	E
57	Alamitos Avenue/Broadway	Long Beach	0.87	D	>1.00	F
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.88	D	0.79	C
59	Cherry Avenue/Artesia Boulevard	Long Beach	0.90	D	>1.00	F
60	Cherry Avenue/Market Street	Long Beach	0.82	D	>1.00	F
61	Cherry Avenue/Del Amo Boulevard	Long Beach/Lakewood	0.87	D	0.98	E
62	Cherry Avenue/Carson Street	Long Beach	0.69	B	0.92	E
63	Cherry Avenue/Wardlow Road	Long Beach	0.83	D	0.89	D
64	Cherry Avenue/Willow Street	Signal Hill	0.78	C	0.90	D
65	Cherry Avenue/Pacific Coast Hwy	Caltrans	0.88	D	0.83	D
66	Cherry Avenue/7th Street	Long Beach	0.85	D	0.91	E
67	Paramount Boulevard/Artesia Boulevard	Long Beach	0.75	C	0.76	C
68	Paramount Boulevard/South Street	Long Beach	0.74	C	0.96	E
69	Paramount Boulevard/Del Amo Boulevard	Lakewood	0.94	E	>1.00	F
70	Paramount Boulevard/Carson Street	Lakewood	0.71	C	0.95	E
71	Downey Avenue/Alondra Boulevard	Paramount	0.88	D	0.93	E
72	Redondo Avenue/Spring Street	Long Beach	0.98	E	>1.00	F
73	Redondo Avenue/Willow Street	Long Beach	0.77	C	0.83	D
74	Redondo Avenue/Pacific Coast Hwy	Caltrans	>1.00	F	>1.00	F
75	Redondo Avenue/Anaheim Street	Long Beach	0.99	E	>1.00	F
76	Redondo Avenue/7th Street	Long Beach	>1.00	F	>1.00	F
77	Redondo Avenue/3rd Street	Long Beach	0.54	A	0.55	A
78	Redondo Avenue/Ocean Boulevard	Long Beach	0.61	B	0.68	B
79	Lakewood Boulevard/Del Amo Boulevard	Long Beach/Lakewood	0.99	E	>1.00	F
80	Lakewood Boulevard/Carson Street	Long Beach/Lakewood	0.70	B	0.84	D
81	Lakewood Boulevard/Spring Street	Long Beach	0.94	E	0.97	E
82	Lakewood Boulevard/I-405 WB Ramps	Caltrans	0.46	A	0.50	A
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	Caltrans	0.50	A	0.43	A
84	Lakewood Boulevard/Willow Street	Long Beach	>1.00	F	>1.00	F
85	Ximeno Avenue/Pacific Coast Hwy	Caltrans	0.78	C	0.87	D
86	Ximeno Avenue/7th Street	Long Beach	>1.00	F	0.96	E
87	Ximeno Avenue/4th Street	Long Beach	0.70	B	0.81	D

Table C: General Plan Anticipated Buildout (2040) With Proposed Project Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
88	Park Avenue/7th Street	Long Beach	>1.00	F	>1.00	F
89	Park Avenue/4th Street	Long Beach	0.80	C	0.85	D
90	Livingston Drive/2nd Street	Long Beach	0.80	C	0.69	B
91	Pacific Coast Hwy/Anaheim Street	Caltrans	>1.00	F	0.91	E
92	Pacific Coast Hwy/7th Street	Caltrans	>1.00	F	>1.00	F
93	Bellflower Boulevard/Del Amo Boulevard	Long Beach/Lakewood	0.93	E	>1.00	F
94	Bellflower Boulevard/Carson Street	Long Beach/Lakewood	0.85	D	>1.00	F
95	Bellflower Boulevard/Spring Street	Long Beach	0.87	D	0.87	D
96	Bellflower Boulevard/Los Coyotes Diagonal	Long Beach	0.71	C	0.85	D
97	Bellflower Boulevard/Atherton Street	Long Beach	0.90	D	0.90	D
98	Bellflower Boulevard/7th Street	Long Beach	0.93	E	0.89	D
99	Bellflower Boulevard/Pacific Coast Hwy	Caltrans	0.80	C	0.90	D
100	Pacific Coast Hwy/2nd Street	Caltrans	>1.00	F	>1.00	F
101	1st Street/Marina Drive	Long Beach	0.24	A	0.29	A
102	Los Coyotes Diagonal/Spring Street	Long Beach	0.76	C	0.82	D
103	West Campus Drive/7th Street	Long Beach	0.81	D	0.82	D
104	East Campus Road/7th Street	Long Beach	0.89	D	0.93	E
105	Palo Verde Avenue/Wardlow Road	Long Beach	0.54	A	0.73	C
106	Palo Verde Avenue/Anaheim Street	Long Beach	0.56	A	0.84	D
107	Los Coyotes Diagonal/Carson Street	Long Beach/Lakewood	0.79	C	0.88	D
108	Studebaker Road/Spring Street	Long Beach	0.52	A	0.89	D
109	Studebaker Road/Willow Street	Long Beach	0.87	D	0.98	E
110	7th Street/College Park Drive	Long Beach	0.78	C	>1.00	F
111	Studebaker Road/2nd Street	Long Beach	0.95	E	1.00	E
112	I-605 SB Ramps/Carson Street	Caltrans	0.64	B	0.78	C
113	I-605 NB Ramps/Carson Street	Caltrans	0.69	B	0.74	C
114	Norwalk Boulevard/Carson Street	Hawaiian Gardens	0.87	D	0.94	E
115	Norwalk Boulevard/Cerritos Avenue	Los Alamitos	0.85	D	>1.00	F
116	Los Alamitos Boulevard/Katella Avenue	Garden Grove	>1.00	F	1.00	E
117	Seal Beach Boulevard/Westminster Road	Seal Beach	0.97	E	>1.00	F
118	Atlantic Avenue/I-405 WB Ramps	Caltrans	0.39	A	0.51	A
119	I-710/Anaheim Street Cloverleaf WB	Caltrans	N/A[1]		N/A[1]	
120	I-710/Anaheim Street Cloverleaf EB	Caltrans	N/A[1]		N/A[1]	

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per the City's TIA guidelines.
[1] Intersection is not stop controlled

Caltrans = California Department of Transportation
EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

Table D: Intersection
Level of Service Comparison – Proposed Project versus Existing Conditions

	Intersection	Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change with Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	Avalon Boulevard/Pacific Coast Hwy	0.75	C	0.72	C	0.85	D	0.81	D	0.10	0.09
2	Avalon Boulevard/Anaheim Street	0.56	A	0.62	B	0.59	A	0.67	B	0.03	0.05
3	Wilmington Avenue/Sepulveda Boulevard	0.70	B	0.67	B	0.79	C	0.78	C	0.09	0.11
4	Wilmington Avenue/223rd Street	>1.00	F	1.00	E	**>1.00**	**F**	**>1.00**	**F**	0.14	0.12
5	Terminal Island Freeway/Willow Street	0.40	A	0.56	A	0.49	A	0.67	B	0.09	0.11
6	Santa Fe Avenue/Wardlow Road	0.57	A	0.72	C	0.63	B	0.78	C	0.06	0.06
7	Santa Fe Avenue/Willow Street	0.80	C	0.89	D	**0.91**	**E**	**0.98**	**E**	0.11	0.09
8	Santa Fe Avenue/Pacific Coast Hwy	0.76	C	0.77	C	0.86	D	0.87	D	0.10	0.10
9	Santa Fe Avenue/Anaheim Street	0.48	A	0.55	A	0.56	A	0.63	B	0.08	0.08
10	I-710/SR-1 Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
11	I-710/SR-1 Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
12	Magnolia Avenue/Ocean Boulevard	0.65	B	0.60	A	0.74	C	0.68	B	0.09	0.08
13	Pacific Avenue/Pacific Coast Hwy	0.64	B	0.75	C	0.74	C	0.81	D	0.10	0.06
14	Pacific Avenue/Anaheim Street	0.65	B	0.74	C	0.73	C	0.84	D	0.08	0.10
15	Pacific Avenue/7th Street	0.50	A	0.38	A	0.55	A	0.41	A	0.05	0.03
16	Pacific Avenue/6th Street	0.35	A	0.65	B	0.37	A	0.73	C	0.02	0.08
17	Pacific Avenue/3rd Street	0.52	A	0.38	A	0.57	A	0.42	A	0.05	0.04
18	Pacific Avenue/Broadway	0.37	A	0.55	A	0.41	A	0.62	B	0.04	0.07
19	Pacific Avenue/Ocean Boulevard	>1.00	F	0.87	D	**>1.00**	**F**	**0.95**	**E**	0.03	0.08
20	Long Beach Boulevard/Alondra Boulevard	0.69	B	0.87	D	0.77	C	**0.97**	**E**	0.08	0.10
21	Long Beach Boulevard/Artesia Boulevard	0.74	C	0.81	D	0.80	C	**0.93**	**E**	0.06	0.12
22	Long Beach Boulevard/Market Street	0.64	B	0.79	C	0.68	B	0.88	D	0.04	0.09
23	Long Beach Boulevard/Del Amo Boulevard	0.82	D	0.70	B	0.90	D	0.76	C	0.08	0.06
24	Long Beach Boulevard/San Antonio Drive	0.60	A	0.79	C	0.68	B	0.89	D	0.08	0.10
25	Long Beach Boulevard/Wardlow Road	0.89	D	0.91	E	**0.98**	**E**	**>1.00**	**F**	0.09	0.10
26	Long Beach Boulevard/Spring Street	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.15	0.23
27	Long Beach Boulevard/Willow Street	0.75	C	0.78	C	0.85	D	0.89	D	0.10	0.11
28	Long Beach Boulevard/Pacific Coast Hwy	0.68	B	0.75	C	0.76	C	0.85	D	0.08	0.10
29	Long Beach Boulevard/Anaheim Street	0.56	A	0.68	B	0.63	B	0.77	C	0.07	0.09
30	Long Beach Boulevard/7th Street	>1.00	F	0.79	C	**>1.00**	**F**	0.81	D	0.16	0.02
31	Long Beach Boulevard/6th Street	0.39	A	0.64	B	0.44	A	0.76	C	0.05	0.12
32	Long Beach Boulevard/3rd Street	0.52	A	0.40	A	0.57	A	0.45	A	0.05	0.05
33	Long Beach Boulevard/Broadway	0.41	A	0.61	B	0.48	A	0.69	B	0.07	0.08
34	Long Beach Boulevard/Ocean Boulevard	0.60	A	0.51	A	0.63	B	0.55	A	0.03	0.04
35	Atlantic Avenue/Alondra Boulevard	0.80	C	0.76	C	0.87	D	0.87	D	0.07	0.11
36	Atlantic Avenue/SR-91 WB Ramps	0.60	A	0.53	A	0.64	B	0.59	A	0.04	0.06
37	Atlantic Avenue/SR-91 EB Ramps	0.48	A	0.58	A	0.54	A	0.65	B	0.06	0.07
38	Atlantic Avenue/Artesia Boulevard	0.79	C	0.86	D	0.88	D	**0.98**	**E**	0.09	0.12

Table D: Intersection
Level of Service Comparison – Proposed Project versus Existing Conditions

Intersection		Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change with Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
39	Atlantic Avenue/South Street	0.52	A	0.72	C	0.59	A	0.80	C	0.07	0.08
40	Atlantic Avenue/Del Amo Boulevard	0.77	C	0.79	C	0.88	D	0.90	D	0.11	0.11
41	Atlantic Avenue/33rd Street	0.48	A	0.72	C	0.55	A	0.78	C	0.07	0.06
42	Atlantic Avenue/I-405 EB Ramps	0.49	A	0.55	A	0.55	A	0.61	B	0.06	0.06
43	Atlantic Avenue/Willow Street	0.68	B	0.79	C	0.75	C	**0.91**	**E**	0.07	0.12
44	Atlantic Avenue/Pacific Coast Hwy	0.68	B	0.73	C	0.78	C	0.87	D	0.10	0.14
45	Atlantic Avenue/Anaheim Street	0.76	C	0.81	D	0.84	D	0.89	D	0.08	0.08
46	Atlantic Avenue/7th Street	0.70	B	0.55	A	0.78	C	0.62	B	0.08	0.07
47	Atlantic Avenue/6th Street	0.40	A	0.61	B	0.49	A	0.66	B	0.09	0.05
48	Atlantic Avenue/3rd Street	0.56	A	0.35	A	0.62	B	0.42	A	0.06	0.07
49	Atlantic Avenue/Broadway	0.28	A	0.62	B	0.30	A	0.67	B	0.02	0.05
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	0.57	A	0.52	A	0.63	B	0.55	A	0.06	0.03
51	Orange Avenue/Wardlow Road	0.75	C	0.81	D	0.85	D	**0.91**	**E**	0.10	0.10
52	Orange Avenue/Pacific Coast Hwy	0.65	B	0.73	C	0.72	C	0.83	D	0.07	0.10
53	Alamitos Avenue/Anaheim Street	0.84	D	0.88	D	**0.94**	**E**	**1.00**	**E**	0.10	0.12
54	Alamitos Avenue/7th Street	0.80	C	0.73	C	**0.92**	**E**	0.84	D	0.12	0.11
55	Alamitos Avenue/6th Street	0.78	C	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	1.19	1.56
56	Alamitos Avenue/3rd Street	0.86	D	0.59	A	**0.95**	**E**	**0.91**	**E**	0.09	0.32
57	Alamitos Avenue/Broadway	0.68	B	0.82	D	0.87	D	**>1.00**	**F**	0.19	0.32
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	0.79	C	0.73	C	0.88	D	0.79	C	0.09	0.06
59	Cherry Avenue/Artesia Boulevard	0.82	D	0.87	D	0.90	D	**>1.00**	**F**	0.08	0.15
60	Cherry Avenue/Market Street	0.75	C	0.90	D	0.82	D	**>1.00**	**F**	0.07	0.15
61	Cherry Avenue/Del Amo Boulevard	0.77	C	0.85	D	0.87	D	**0.98**	**E**	0.10	0.13
62	Cherry Avenue/Carson Street	0.65	B	0.81	D	0.69	B	**0.92**	**E**	0.04	0.11
63	Cherry Avenue/Wardlow Road	0.78	C	0.89	D	0.83	D	0.89	D	0.05	0.00
64	Cherry Avenue/Willow Street	0.71	C	0.81	D	0.78	C	0.90	D	0.07	0.09
65	Cherry Avenue/Pacific Coast Hwy	0.77	C	0.74	C	0.88	D	0.83	D	0.11	0.09
66	Cherry Avenue/7th Street	0.80	C	0.80	C	0.85	D	**0.91**	**E**	0.05	0.11
67	Paramount Boulevard/Artesia Boulevard	0.67	B	0.67	B	0.75	C	0.76	C	0.08	0.09
68	Paramount Boulevard/South Street	0.66	B	0.84	D	0.74	C	**0.96**	**E**	0.08	0.12
69	Paramount Boulevard/Del Amo Boulevard	0.84	D	0.92	E	**0.94**	**E**	**>1.00**	**F**	0.10	0.12
70	Paramount Boulevard/Carson Street	0.64	B	0.86	D	0.71	C	**0.95**	**E**	0.07	0.09
71	Downey Avenue/Alondra Boulevard	0.77	C	0.82	D	0.88	D	**0.93**	**E**	0.11	0.11
72	Redondo Avenue/Spring Street	0.63	B	0.69	B	**0.98**	**E**	**>1.00**	**F**	0.35	0.38
73	Redondo Avenue/Willow Street	0.70	B	0.74	C	0.77	C	0.83	D	0.07	0.09
74	Redondo Avenue/Pacific Coast Hwy	0.97	E	0.98	E	**>1.00**	**F**	**>1.00**	**F**	0.09	0.08
75	Redondo Avenue/Anaheim Street	0.87	D	0.94	E	**0.99**	**E**	**>1.00**	**F**	0.12	0.13
76	Redondo Avenue/7th Street	0.97	E	0.91	E	**>1.00**	**F**	**>1.00**	**F**	0.04	0.13
77	Redondo Avenue/3rd Street	0.48	A	0.52	A	0.54	A	0.55	A	0.06	0.03

Table D: Intersection
Level of Service Comparison – Proposed Project versus Existing Conditions

Intersection		Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change with Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
78	Redondo Avenue/Ocean Boulevard	0.58	A	0.68	B	0.61	B	0.68	B	0.03	0.00
79	Lakewood Boulevard/Del Amo Boulevard	0.89	D	0.97	E	**0.99**	**E**	**>1.00**	**F**	0.10	0.12
80	Lakewood Boulevard/Carson Street	0.63	B	0.77	C	0.70	B	0.84	D	0.07	0.07
81	Lakewood Boulevard/Spring Street	0.82	D	0.81	D	**0.94**	**E**	**0.97**	**E**	0.12	0.16
82	Lakewood Boulevard/I-405 WB Ramps	0.41	A	0.46	A	0.46	A	0.50	A	0.05	0.04
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	0.45	A	0.43	A	0.50	A	0.43	A	0.05	0.00
84	Lakewood Boulevard/Willow Street	0.93	E	0.95	E	**>1.00**	**F**	**>1.00**	**F**	0.09	0.07
85	Ximeno Avenue/Pacific Coast Hwy	0.71	C	0.80	C	0.78	C	0.87	D	0.07	0.07
86	Ximeno Avenue/7th Street	0.92	E	0.85	D	**>1.00**	**F**	**0.96**	**E**	0.12	0.11
87	Ximeno Avenue/4th Street	0.64	B	0.74	C	0.70	B	0.81	D	0.06	0.07
88	Park Avenue/7th Street	0.93	E	0.90	D	**>1.00**	**F**	**>1.00**	**F**	0.16	0.12
89	Park Avenue/4th Street	0.74	C	0.76	C	0.80	C	0.85	D	0.06	0.09
90	Livingston Drive/2nd Street	0.70	B	0.62	B	0.80	C	0.69	B	0.10	0.07
91	Pacific Coast Hwy/Anaheim Street	0.70	B	0.80	C	**>1.00**	**F**	**0.91**	**E**	0.33	0.11
92	Pacific Coast Hwy/7th Street	0.95	E	0.96	E	**>1.00**	**F**	**>1.00**	**F**	0.11	0.11
93	Bellflower Boulevard/Del Amo Boulevard	0.82	D	>1.00	F	**0.93**	**E**	**>1.00**	**F**	0.11	0.14
94	Bellflower Boulevard/Carson Street	0.79	C	0.93	E	0.85	D	**>1.00**	**F**	0.06	0.12
95	Bellflower Boulevard/Spring Street	0.76	C	0.79	C	0.87	D	0.87	D	0.11	0.08
96	Bellflower Boulevard/Los Coyotes Diagonal	0.65	B	0.82	D	0.71	C	0.85	D	0.06	0.03
97	Bellflower Boulevard/Atherton Street	0.79	C	0.80	C	0.90	D	0.90	D	0.11	0.10
98	Bellflower Boulevard/7th Street	0.85	D	0.80	C	**0.93**	**E**	0.89	D	0.08	0.09
99	Bellflower Boulevard/Pacific Coast Hwy	0.71	C	0.79	C	0.80	C	0.90	D	0.09	0.11
100	Pacific Coast Hwy/2nd Street	0.93	E	0.87	D	**>1.00**	**F**	**>1.00**	**F**	0.13	0.14
101	1st Street/Marina Drive	0.22	A	0.27	A	0.24	A	0.29	A	0.02	0.02
102	Los Coyotes Diagonal/Spring Street	0.70	B	0.74	C	0.76	C	0.82	D	0.06	0.08
103	West Campus Drive/7th Street	0.72	C	0.72	C	0.81	D	0.82	D	0.09	0.10
104	East Campus Road/7th Street	0.77	C	0.80	C	0.89	D	**0.93**	**E**	0.12	0.13
105	Palo Verde Avenue/Wardlow Road	0.50	A	0.65	B	0.54	A	0.73	C	0.04	0.08
106	Palo Verde Avenue/Anaheim Street	0.51	A	0.75	C	0.56	A	0.84	D	0.05	0.09
107	Los Coyotes Diagonal/Carson Street	0.71	C	0.78	C	0.79	C	0.88	D	0.08	0.10
108	Studebaker Road/Spring Street	0.47	A	0.79	C	0.52	A	0.89	D	0.05	0.10
109	Studebaker Road/Willow Street	0.77	C	0.87	D	0.87	D	**0.98**	**E**	0.10	0.11
110	7th Street/College Park Drive	0.77	C	>1.00	F	0.78	C	**>1.00**	**F**	0.01	0.27
111	Studebaker Road/2nd Street	0.82	D	0.88	D	**0.95**	**E**	**1.00**	**E**	0.13	0.12
112	I-605 SB Ramps/Carson Street	0.56	A	0.68	B	0.64	B	0.78	C	0.08	0.10
113	I-605 NB Ramps/Carson Street	0.56	A	0.60	A	0.69	B	0.74	C	0.13	0.14
114	Norwalk Boulevard/Carson Street	0.77	C	0.83	D	0.87	D	**0.94**	**E**	0.10	0.11
115	Norwalk Boulevard/Cerritos Avenue	0.78	C	0.90	D	0.85	D	**>1.00**	**F**	0.07	0.12

Table D: Intersection Level of Service Comparison – Proposed Project versus Existing Conditions

Intersection		Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change with Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
116	Los Alamitos Boulevard/Katella Avenue	0.88	D	0.88	D	>1.00	F	1.00	E	0.15	0.12
117	Seal Beach Boulevard/Westminster Road	0.80	C	0.93	E	0.97	E	>1.00	F	0.17	0.13
118	Atlantic Avenue/I-405 WB Ramps	0.37	A	0.48	A	0.39	A	0.51	A	0.02	0.03
119	I-710/Anaheim Street Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
120	I-710/Anaheim Street Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per City's TIA guidelines. Cells shaded with black indicate significant impact.
[1] Intersection is not stop controlled

EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

Table D presented the CEQA-required analysis of proposed project impacts as compared to the existing conditions. In order to provide a more direct comparison of the effects of the increased housing and locational change of land use concentration in the proposed Land Use Element, Table E compares the results of the General Plan Horizon Year (2040) No Project and General Plan Anticipated Buildout (2040) With the Proposed Project scenarios. As Table E shows, when compared to the existing Land Use Element, the proposed Land Use Element results in some intersections operating better and some intersections operating poorer due to the redistribution of land uses.

The following four intersections had been forecast to operate at unsatisfactory LOS under General Plan Horizon Year (2040) No Project conditions and are forecast to operate at satisfactory LOS under General Plan Anticipated Buildout (2040) With Proposed Project conditions:

23. Long Beach Boulevard/Del Amo Boulevard
45. Atlantic Avenue/Anaheim Street
85. Ximeno Avenue/Pacific Coast Hwy
97. Bellflower Boulevard/Atherton Street

Table E: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

Intersection		General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	Avalon Boulevard/Pacific Coast Hwy	0.85	D	0.81	D	0.85	D	0.81	D	0.00	0.00
2	Avalon Boulevard/Anaheim Street	0.59	A	0.68	B	0.59	A	0.67	B	0.00	(0.01)
3	Wilmington Avenue/Sepulveda Boulevard	0.79	C	0.78	C	0.79	C	0.78	C	0.00	0.00
4	Wilmington Avenue/223rd Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	0.00	(0.02)
5	Terminal Island Freeway/Willow Street	0.48	A	0.68	B	0.49	A	0.67	B	0.01	(0.01)
6	Santa Fe Avenue/Wardlow Road	0.62	B	0.79	C	0.63	B	0.78	C	0.01	(0.01)
7	Santa Fe Avenue/Willow Street	0.85	D	1.00	E	**0.91**	**E**	0.98	E	0.06	(0.02)
8	Santa Fe Avenue/Pacific Coast Hwy	0.86	D	0.87	D	0.86	D	0.87	D	0.00	0.00
9	Santa Fe Avenue/Anaheim Street	0.54	A	0.61	B	0.56	A	0.63	B	0.02	0.02
10	I-710/SR-1 Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
11	I-710/SR-1 Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
12	Magnolia Avenue/Ocean Boulevard	0.75	C	0.68	B	0.74	C	0.68	B	(0.01)	0.00
13	Pacific Avenue/Pacific Coast Hwy	0.71	C	0.84	D	0.74	C	0.81	D	0.03	(0.03)
14	Pacific Avenue/Anaheim Street	0.73	C	0.84	D	0.73	C	0.84	D	0.00	0.00
15	Pacific Avenue/7th Street	0.55	A	0.41	A	0.55	A	0.41	A	0.00	0.00
16	Pacific Avenue/6th Street	0.37	A	0.73	C	0.37	A	0.73	C	0.00	0.00
17	Pacific Avenue/3rd Street	0.57	A	0.42	A	0.57	A	0.42	A	0.00	0.00
18	Pacific Avenue/Broadway	0.41	A	0.62	B	0.41	A	0.62	B	0.00	0.00
19	Pacific Avenue/Ocean Boulevard	>1.00	F	0.94	E	>1.00	F	0.95	E	0.00	0.01
20	Long Beach Boulevard/Alondra Boulevard	0.77	C	0.97	E	0.77	C	0.97	E	0.00	0.00
21	Long Beach Boulevard/Artesia Boulevard	0.83	D	0.93	E	0.80	C	0.93	E	(0.03)	0.00
22	Long Beach Boulevard/Market Street	0.69	B	0.87	D	0.68	B	0.88	D	(0.01)	0.01
23	Long Beach Boulevard/Del Amo Boulevard	0.93	E	0.79	C	0.90	D	0.76	C	(0.03)	(0.03)
24	Long Beach Boulevard/San Antonio Drive	0.68	B	0.89	D	0.68	B	0.89	D	0.00	0.00
25	Long Beach Boulevard/Wardlow Road	0.98	E	>1.00	F	0.98	E	>1.00	F	0.00	(0.03)
26	Long Beach Boulevard/Spring Street	>1.00	F	>1.00	F	**>1.00**	**F**	>1.00	F	0.04	0.00
27	Long Beach Boulevard/Willow Street	0.85	D	0.88	D	0.85	D	0.89	D	0.00	0.01
28	Long Beach Boulevard/Pacific Coast Hwy	0.78	C	0.84	D	0.76	C	0.85	D	(0.02)	0.01
29	Long Beach Boulevard/Anaheim Street	0.63	B	0.77	C	0.63	B	0.77	C	0.00	0.00
30	Long Beach Boulevard/7th Street	>1.00	F	0.81	D	>1.00	F	0.81	D	0.00	0.00
31	Long Beach Boulevard/6th Street	0.42	A	0.76	C	0.44	A	0.76	C	0.02	0.00
32	Long Beach Boulevard/3rd Street	0.57	A	0.44	A	0.57	A	0.45	A	0.00	0.01
33	Long Beach Boulevard/Broadway	0.49	A	0.69	B	0.48	A	0.69	B	(0.01)	0.00
34	Long Beach Boulevard/Ocean Boulevard	0.63	B	0.56	A	0.63	B	0.55	A	0.00	(0.01)
35	Atlantic Avenue/Alondra Boulevard	0.90	D	0.87	D	0.87	D	0.87	D	(0.03)	0.00
36	Atlantic Avenue/SR-91 WB Ramps	0.66	B	0.59	A	0.64	B	0.59	A	(0.02)	0.00
37	Atlantic Avenue/SR-91 EB Ramps	0.54	A	0.65	B	0.54	A	0.65	B	0.00	0.00
38	Atlantic Avenue/Artesia Boulevard	0.87	D	0.98	E	0.88	D	0.98	E	0.01	0.00

Table E: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

Intersection		General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
39	Atlantic Avenue/South Street	0.59	A	0.80	C	0.59	A	0.80	C	0.00	0.00
40	Atlantic Avenue/Del Amo Boulevard	0.88	D	0.90	D	0.88	D	0.90	D	0.00	0.00
41	Atlantic Avenue/33rd Street	0.50	A	0.84	D	0.55	A	0.78	C	0.05	(0.06)
42	Atlantic Avenue/I-405 EB Ramps	0.53	A	0.61	B	0.55	A	0.61	B	0.02	0.00
43	Atlantic Avenue/Willow Street	0.79	C	0.87	D	0.75	C	**0.91**	**E**	(0.04)	0.04
44	Atlantic Avenue/Pacific Coast Hwy	0.77	C	0.85	D	0.78	C	0.87	D	0.01	0.02
45	Atlantic Avenue/Anaheim Street	0.88	D	0.94	E	0.84	D	0.89	D	(0.04)	(0.05)
46	Atlantic Avenue/7th Street	0.78	C	0.59	A	0.78	C	0.62	B	0.00	0.03
47	Atlantic Avenue/6th Street	0.49	A	0.66	B	0.49	A	0.66	B	0.00	0.00
48	Atlantic Avenue/3rd Street	0.63	B	0.41	A	0.62	B	0.42	A	(0.01)	0.01
49	Atlantic Avenue/Broadway	0.30	A	0.66	B	0.30	A	0.67	B	0.00	0.01
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	0.62	B	0.54	A	0.63	B	0.55	A	0.01	0.01
51	Orange Avenue/Wardlow Road	0.82	D	0.91	E	0.85	D	0.91	E	0.03	0.00
52	Orange Avenue/Pacific Coast Hwy	0.71	C	0.83	D	0.72	C	0.83	D	0.01	0.00
53	Alamitos Avenue/Anaheim Street	0.94	E	1.00	E	0.94	E	1.00	E	0.00	0.00
54	Alamitos Avenue/7th Street	0.92	E	0.83	D	0.92	E	0.84	D	0.00	0.01
55	Alamitos Avenue/6th Street	>1.00	F	>1.00	F	>1.00	F	**>1.00**	**F**	(0.01)	0.03
56	Alamitos Avenue/3rd Street	0.96	E	0.92	E	0.95	E	0.91	E	(0.01)	(0.01)
57	Alamitos Avenue/Broadway	0.84	D	>1.00	F	0.87	D	>1.00	E	0.03	0.00
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	0.85	D	0.79	C	0.88	D	0.79	C	0.03	0.00
59	Cherry Avenue/Artesia Boulevard	0.92	E	0.99	E	0.90	D	**>1.00**	**F**	(0.02)	0.03
60	Cherry Avenue/Market Street	0.88	D	>1.00	F	0.82	D	>1.00	F	(0.06)	0.00
61	Cherry Avenue/Del Amo Boulevard	0.87	D	0.97	E	0.87	D	0.98	E	0.00	0.01
62	Cherry Avenue/Carson Street	0.73	C	0.92	E	0.69	B	0.92	E	(0.04)	0.00
63	Cherry Avenue/Wardlow Road	0.86	D	0.97	E	0.83	D	0.89	D	(0.03)	(0.08)
64	Cherry Avenue/Willow Street	0.81	D	0.92	E	0.78	C	0.90	D	(0.03)	(0.02)
65	Cherry Avenue/Pacific Coast Hwy	0.88	D	0.83	D	0.88	D	0.83	D	0.00	0.00
66	Cherry Avenue/7th Street	0.92	E	0.90	D	0.85	D	0.91	E	(0.07)	0.01
67	Paramount Boulevard/Artesia Boulevard	0.76	C	0.75	C	0.75	C	0.76	C	(0.01)	0.01
68	Paramount Boulevard/South Street	0.76	C	0.96	E	0.74	C	0.96	E	(0.02)	0.00
69	Paramount Boulevard/Del Amo Boulevard	0.96	E	>1.00	F	0.94	E	>1.00	F	(0.02)	0.00
70	Paramount Boulevard/Carson Street	0.71	C	0.95	E	0.71	C	0.95	E	0.00	0.00
71	Downey Avenue/Alondra Boulevard	0.88	D	0.92	E	0.88	D	0.93	E	0.00	0.01
72	Redondo Avenue/Spring Street	0.70	B	0.79	C	**0.98**	**E**	**>1.00**	**F**	0.28	0.28
73	Redondo Avenue/Willow Street	0.78	C	0.84	D	0.77	C	0.83	D	(0.01)	(0.01)
74	Redondo Avenue/Pacific Coast Hwy	>1.00	F	>1.00	F	>1.00	F	>1.00	F	(0.03)	(0.03)
75	Redondo Avenue/Anaheim Street	0.99	E	>1.00	F	0.99	E	>1.00	F	0.00	(0.01
76	Redondo Avenue/7th Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	(0.09)	0.00
77	Redondo Avenue/3rd Street	0.54	A	0.58	A	0.54	A	0.55	A	0.00	(0.03)

Table E: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

Intersection		General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
78	Redondo Avenue/Ocean Boulevard	0.60	A	0.77	C	0.61	B	0.68	B	0.01	(0.09)
79	Lakewood Boulevard/Del Amo Boulevard	>1.00	F	>1.00	F	0.99	E	>1.00	F	(0.04)	0.00
80	Lakewood Boulevard/Carson Street	0.72	C	0.88	D	0.70	B	0.84	D	(0.02)	(0.04)
81	Lakewood Boulevard/Spring Street	0.93	E	0.91	E	0.94	E	**0.97**	**E**	0.01	0.06
82	Lakewood Boulevard/I-405 WB Ramps	0.46	A	0.51	A	0.46	A	0.50	A	0.00	(0.01)
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	0.50	A	0.48	A	0.50	A	0.43	A	0.00	(0.05)
84	Lakewood Boulevard/Willow Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	(0.02)	(0.04)
85	Ximeno Avenue/Pacific Coast Hwy	0.80	C	0.92	E	0.78	C	0.87	D	(0.02)	(0.05)
86	Ximeno Avenue/7th Street	>1.00	F	0.96	E	>1.00	F	0.96	E	0.00	0.00
87	Ximeno Avenue/4th Street	0.72	C	0.81	D	0.70	B	0.81	D	(0.02)	0.00
88	Park Avenue/7th Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	0.00	0.00
89	Park Avenue/4th Street	0.79	C	0.85	D	0.80	C	0.85	D	0.01	0.00
90	Livingston Drive/2nd Street	0.80	C	0.65	B	0.80	C	0.69	B	0.00	0.04
91	Pacific Coast Hwy/Anaheim Street	0.99	E	0.91	E	>1.00	F	0.91	E	0.04	0.00
92	Pacific Coast Hwy/7th Street	>1.00	F	>1.00	F	>1.00	F	**>1.00**	**F**	0.00	0.03
93	Bellflower Boulevard/Del Amo Boulevard	0.93	E	>1.00	F	0.93	E	>1.00	F	0.00	0.00
94	Bellflower Boulevard/Carson Street	0.88	D	>1.00	F	0.85	D	>1.00	F	(0.03)	(0.03)
95	Bellflower Boulevard/Spring Street	0.90	D	0.90	D	0.87	D	0.87	D	(0.03)	(0.03)
96	Bellflower Boulevard/Los Coyotes Diagonal	0.70	B	0.88	D	0.71	C	0.85	D	0.01	(0.03)
97	Bellflower Boulevard/Atherton Street	0.91	E	0.91	E	0.90	D	0.90	D	(0.01)	(0.01)
98	Bellflower Boulevard/7th Street	0.93	E	0.88	D	0.93	E	0.89	D	0.00	0.01
99	Bellflower Boulevard/Pacific Coast Hwy	0.80	C	0.90	D	0.80	C	0.90	D	0.00	0.00
100	Pacific Coast Hwy/2nd Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	0.00	0.00
101	1st Street/Marina Drive	0.24	A	0.29	A	0.24	A	0.29	A	0.00	0.00
102	Los Coyotes Diagonal/Spring Street	0.75	C	0.82	D	0.76	C	0.82	D	0.01	0.00
103	West Campus Drive/7th Street	0.80	C	0.82	D	0.81	D	0.82	D	0.01	0.00
104	East Campus Road/7th Street	0.89	D	0.93	E	0.89	D	0.93	E	0.00	0.00
105	Palo Verde Avenue/Wardlow Road	0.54	A	0.73	C	0.54	A	0.73	C	0.00	0.00
106	Palo Verde Avenue/Anaheim Street	0.56	A	0.85	D	0.56	A	0.84	D	0.00	(0.01)
107	Los Coyotes Diagonal/Carson Street	0.78	C	0.88	D	0.79	C	0.88	D	0.01	0.00
108	Studebaker Road/Spring Street	0.54	A	0.89	D	0.52	A	0.89	D	(0.02)	0.00
109	Studebaker Road/Willow Street	0.87	D	1.00	E	0.87	D	0.98	E	0.00	(0.02)
110	7th Street/College Park Drive	0.86	D	>1.00	F	0.78	C	**>1.00**	**F**	(0.08)	0.14
111	Studebaker Road/2nd Street	0.95	E	>1.00	F	0.95	E	1.00	E	0.00	(0.12)
112	I-605 SB Ramps/Carson Street	0.64	B	0.89	D	0.64	B	0.78	C	0.00	(0.11)
113	I-605 NB Ramps/Carson Street	0.68	B	0.74	C	0.69	B	0.74	C	0.01	0.00
114	Norwalk Boulevard/Carson Street	0.87	D	0.94	E	0.87	D	0.94	E	0.00	0.00
115	Norwalk Boulevard/Cerritos Avenue	0.88	D	>1.00	F	0.85	D	>1.00	F	(0.03)	0.00

Table E: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

Intersection		General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
116	Los Alamitos Boulevard/Katella Avenue	>1.00	F	1.00	E	>1.00	F	1.00	E	0.01	0.00
117	Seal Beach Boulevard/Westminster Road	0.95	E	>1.00	F	0.97	E	>1.00	F	0.02	0.00
118	Atlantic Avenue/I-405 WB Ramps	0.38	A	0.50	A	0.39	A	0.51	A	0.01	0.01
119	I-710/Anaheim Street Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
120	I-710/Anaheim Street Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per the City's TIA guidelines. Cells shaded with black indicate significant impact.
[1] Intersection is not stop controlled

EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

The following nine intersections would be impacted in the plan-to-plan comparison:

7. Santa Fe Avenue/Willow Street
26. Long Beach Boulevard/Spring Street
43. Atlantic Avenue/Willow Street
55. Alamitos Avenue/6th Street
59. Cherry Avenue/Artesia Boulevard
72. Redondo Avenue/Spring Street
81. Lakewood Boulevard/Spring Street
92. Pacific Coast Hwy/7th Street
110. 7th Street/College Park Drive

CONGESTION MANAGEMENT PROGRAM ANALYSIS

Arterial Monitoring Station Locations

The Los Angeles County CMP monitors 10 intersections within Long Beach. Table F summarizes the performance of these CMP intersections under Existing (2018), General Plan Horizon Year (2040) No Project, and General Plan Anticipated Buildout (2040) With Proposed Project conditions. As Table F shows, future traffic growth and the project are anticipated to result in LOS F conditions (with a 0.02 or greater increase in v/c) at 3 of the 10 CMP intersections in Long Beach and would, therefore, have a significant impact. The four impacted intersections are:

76. Redondo Avenue/7th Street
84. Lakewood Boulevard/Willow Street
92. Pacific Coast Hwy/7th Street
100. Pacific Coast Hwy/2nd Street

Table F: CMP Intersection Summary

Intersection		Existing (2018)				General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change (Existing to Proposed Project)	
		AM		PM		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
8	Santa Fe Avenue/Pacific Coast Hwy	0.76	C	0.77	C	0.86	D	0.87	D	0.86	D	0.87	D	0.10	0.10
52	Orange Avenue/Pacific Coast Hwy	0.65	B	0.73	C	0.71	C	0.83	D	0.72	C	0.83	D	0.07	0.10
54	Alamitos Avenue/7th Street	0.80	C	0.73	C	0.92	E	0.83	D	0.92	E	0.84	D	0.12	0.11
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	0.79	C	0.73	C	0.85	D	0.79	C	0.88	D	0.79	C	0.09	0.06
76	Redondo Avenue/7th Street	0.97	E	0.91	E	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.04	0.13
80	Lakewood Boulevard/Carson Street	0.63	B	0.77	C	0.72	C	0.88	D	0.70	B	0.84	D	0.07	0.07
84	Lakewood Boulevard/Willow Street	0.93	E	0.95	E	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.09	0.07
85	Ximeno Avenue/Pacific Coast Hwy	0.71	C	0.80	C	0.80	C	0.92	E	0.78	C	0.87	D	0.07	0.07
92	Pacific Coast Hwy/7th Street	0.95	E	0.96	E	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.11	0.11
100	Pacific Coast Hwy/2nd Street	0.93	E	0.87	D	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.13	0.14

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per CMP guidelines. Cells shaded with black indicate significant impact.
Hwy = Highway
LOS = level of service
V/C = volume-to-capacity

CMP Transit Analysis

Los Angeles County CMP Appendix D.8.4 provides guidelines on estimating transit ridership generated by a project. As shown on Figure 7, Long Beach is served by a robust transit network. The proposed Land Use Element increases density of land uses adjacent to transit corridors (as illustrated in Figures 1 and 2) to leverage the existing transit infrastructure and potentially reduce VMT and greenhouse gas emissions.

Based on the guidance provided in the Los Angeles County CMP, it is estimated that 7 percent of residential person-trips and 9 percent of commercial person-trips in the Downtown PlaceType (within 0.25 mile [mi] of the Transit Gallery multi-modal transportation corridor), 5 percent of residential person-trips and 7 percent of commercial person-trips in the Transit-Oriented Development PlaceType (within 0.25 mi of the Blue Line, a CMP transit corridor), and 3.5 percent of all other person-trips would be transit trips.

For residential and commercial person-trip data, this analysis uses population and employment data respectively. The data developed for the anticipated General Plan Horizon Year (2040) With Proposed Project scenario estimated that the population in the Downtown PlaceType would increase by 3,190 while employment would increase by 5,200. Transit-Oriented Development PlaceTypes will have a population increase of 7,448 and an employment increase of 268. The population increase for all other areas of Long Beach is 7,592, and the employment increase of all

other areas is 23,043. To avoid double counting, 22 percent of the total 18,230 population change was estimated to both live and work in Long Beach, which is the existing percentage.

The estimated percentage of transit trips and estimated person-trips described above result in an estimated new transit ridership of 2,014 during the single busiest morning peak hour and 2,014 during the single busiest evening peak hour by 2040. Morning and evening commute periods last for multiple hours, but the transit ridership during the remainder of the peak commute periods (as well as midday and late evening) would be lower than this single hour transit demand The busiest hour transit demand would be spread across the Blue Line, 34 fixed routes operated by LBT, and other transit operators in Long Beach. On average, each route would experience an increase of approximately 50 riders during the peak hours. With between 4 and 12 buses/trains per hour, new riders would occupy approximately 5 to 15 percent of a vehicle's capacity (approximately 80 people per vehicle), which is unlikely to create an impact to the existing and future transit service.

Both LBT and Metro have recently (or are currently) engaged in studies seeking to better align services to meet community needs and increase ridership. The LBT Systemwide Transit Analysis and Reassessment Initiative (STAR) surveyed residents regarding improvements to existing service or amenities that further the goal of LBT being the first choice for mobility. Metro's Vision 2028 Strategic Plan seeks to reduce the amount of time residents spend traveling in all travel modes. Metro is extending the light rail lines in its network and closing gaps in the system. Metro is in the second step of the NextGen Bus Study that is looking at the bus system systematically for the first time in 25 years. The Vision 2028 Strategic Plan also considers the role of first and last mile connections to transit.

With improved service levels, new light rail lines, additional connections between travel modes, and new first and last mile options, the rate of new trips taking transit may increase from the rates identified in the 2010 CMP. However, simultaneous with enticing additional ridership, these improved services would include increases in capacity reducing the probability that additional ridership would create an impact to transit service.

CALTRANS FACILITY ANALYSIS

As mentioned in the Methodology section, within the study area, Caltrans has jurisdiction over:

- State Highway Segments
  - Freeway Mainline
  - Arterial State Highways
  - Freeway Merge/Diverge Segments
- Intersections
  - On-/Off-Ramps
  - Arterial State Highway Intersections

This section of the TIA describes the potential impacts to these types of facilities. This analysis has sampled some of the Caltrans facilities within the study area. If impacts are identified at the

sampled facilities, then additional impacts are possible at the remaining facilities. Caltrans concurred with this approach prior to the analysis being conducted.

State Highway Segments

Existing traffic volumes for freeway mainline and arterial State highways were queried from the Caltrans traffic operations website, as were directional and peak-hour factors (i.e., k and d factors). In order to develop the Existing (2018) volumes, a growth factor of 1.52 percent (based on the Los Angeles County CMP) was applied to the 2017 Caltrans volumes. The calculated peak-hour directional volumes were used to calculate v/c ratios to determine the existing LOS.

The General Plan Anticipated Buildout (2040) scenario peak-period traffic volumes were developed from forecasted link volumes and growth factors from the SCAG RTP Travel Demand Model. The base year to future year peak-period change was converted from peak period to peak hour by applying a peak-hour conversion factor (38 percent in the a.m. peak hour and 28 percent for the p.m. peak hour). The modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 base count year conditions to 2040, the volumes represent 78.57 percent (i.e., 22 ÷ 28) of the modeled growth. A project, funded by Metro, is currently underway on SR-91 between Central Avenue and Paramount Boulevard. The effects of this project on capacity were taken into account. Link volumes were then balanced and the V/C ratio was applied to determine the LOS of the segment.

Table G compares Existing (2018) conditions to General Plan Anticipated Buildout (2040) With Proposed Project for freeway mainline segments. Table H compares Existing (2018) conditions to General Plan Horizon Year (2040) With Proposed Project for arterial State routes.

As Table G shows, several freeway mainline segments operate at a failing LOS today and are forecast to operate at an unsatisfactory LOS in the General Plan (2040) With Proposed Land Use Element conditions.

As Table H shows, State highways that function as arterials are not anticipated to experience future traffic volumes that exceed the capacity of roadway lanes. The operation of intersections along these facilities is a more relevant measure of congestion because it is at the intersections that vehicles experience delay.

According to the performance criteria established for this TIA, the project is found to have potentially significant impacts on freeway mainline facilities.

For a more direct comparison of the effects of the increased housing and locational change of land use concentration in the proposed Land Use Element, Table I compares the results of the General Plan Horizon Year (2040) No Project and General Plan Anticipated Buildout (2040) With the Proposed Project scenarios for freeway mainline segments. Table J provides this comparison for State highways that function as arterials.

Table I shows that future traffic volumes are expected to remain similar for most segments regardless of the Land Use Element. However, the proposed Land Use Element does have the

potential to redistribute traffic on freeways. Table J shows minor change on State highways functioning as arterials.

Freeway Merge and Diverge Segments

The freeway merge/diverge junctions with on- and off-ramps were analyzed where freeway ramp intersections were included in the study area. Peak-hour operation performance measures are based on density in terms of passenger cars per mile per lane. Peak-hour on- and off-ramp volumes were identified from the volumes at adjacent ramp intersections. Peak-hour freeway mainline volumes were calculated for the analysis presented above.

Table K summarizes the Existing (2018), General Plan Horizon Year (2040) No Project, and General Plan Anticipated Buildout (2040) With Proposed Project scenarios for peak hour ramp merge/diverge freeway segment LOS. As Table K shows, 16 merge/diverge areas are forecast to operate at an unsatisfactory LOS in the existing condition. The merge/diverge areas are forecast to continue to operate at unsatisfactory conditions in the future regardless of the Land Use Element. However, the project contributes to the deficiency and is determined to have a potentially significant impact on merge/diverge segments. Level of service worksheets are provided in Appendix C.

Table G: Traffic Growth from Existing Conditions Freeway Level of Service Summary

Freeway Segment	Dir	Capacity	Existing (2018)						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
SR-91															
Btwn I-710 and Cherry Avenue	EB	11,750	10,141	0.86	D	10,080	0.86	D	11,723	0.83	D	11,652	0.83	D	0
	WB	11,750	7,492	0.64	B	5,979	0.51	A	8,661	0.74	C	6,912	0.59	A	0
Btwn Cherry Ave and Paramount Boulevard	EB	9,400	9,994	1.06	F	9,934	1.06	F	11,553	**1.23**	**F**	11,484	**1.22**	**F**	2
	WB	9,400	7,384	0.79	C	5,892	0.63	B	8,536	0.91	E	6,811	0.72	C	1
Btwn Paramount Boulevard and Downey Avenue	EB	9,400	9,921	1.06	F	9,861	1.05	F	11,469	**1.22**	**F**	11,399	**1.21**	**F**	2
	WB	9,400	7,330	0.78	C	5,849	0.62	B	8,473	0.90	D	6,761	0.72	C	0
Btwn Downey Avenue and Jct. Rte. 19	EB	9,400	9,482	1.01	F	9,425	1.00	E	10,961	**1.17**	**F**	10,895	**1.16**	**F**	2
	WB	9,400	7,005	0.75	C	5,590	0.59	A	8,098	0.86	D	6,462	0.69	B	0
Btwn Jct. Rte. 19 and Clark Avenue	EB	9,400	9,994	1.06	F	9,934	1.06	F	11,553	**1.23**	**F**	11,484	**1.22**	**F**	2
	WB	9,400	7,384	0.79	C	5,892	0.63	B	8,536	0.91	E	6,811	0.72	C	1
Btwn Clark Avenue and Bellflower Boulevard	EB	11,750	9,884	0.84	D	9,825	0.84	D	12,188	**1.04**	**F**	12,115	**1.03**	**F**	2
	WB	9,400	7,303	0.78	C	5,827	0.62	B	9,005	0.96	E	7,186	0.76	C	1
Btwn Bellflower Boulevard and Jct. Rte. 605	EB	11,750	10,543	0.90	D	10,480	0.89	D	12,188	**1.04**	**F**	12,115	**1.03**	**F**	2
	WB	9,400	7,790	0.83	D	6,216	0.66	B	9,356	1.00	E	10,494	**1.12**	**F**	2
I-405															
Btwn I-605 and Orange/Los Angeles County Line	NB	9,400	9,270	0.99	E	8,159	0.87	D	9,608	**1.02**	**F**	9,432	1.00	E	1
	SB	9,400	8,340	0.89	D	10,201	1.09	F	9,641	**1.03**	**F**	10,243	**1.09**	**F**	2
Btwn Orange/Los Angeles County Line & Studebaker Road	NB	9,400	9,550	1.02	F	8,406	0.89	D	9,766	**1.04**	**F**	8,643	0.92	E	1
	SB	9,400	8,593	0.91	E	10,510	1.12	F	9,934	**1.06**	**F**	12,150	**1.29**	**F**	2
Btwn Studebaker Road and Palo Verde Avenue	NB	9,400	9,164	0.97	E	8,066	0.86	D	9,253	0.98	E	9,324	0.99	E	1
	SB	9,400	8,245	0.88	D	10,085	1.07	F	9,531	**1.01**	**F**	11,658	**1.24**	**F**	2
Btwn Palo Verde Avenue and Woodruff Avenue	NB	9,400	9,340	0.99	E	8,221	0.87	D	9,402	1.00	E	8,238	0.88	D	1
	SB	9,400	8,403	0.89	D	10,278	1.09	F	9,714	**1.03**	**F**	11,881	**1.26**	**F**	2
Btwn Woodruff Avenue and Bellflower Boulevard	NB	9,400	9,761	1.04	F	8,592	0.91	E	11,284	**1.20**	**F**	9,932	**1.06**	**F**	2
	SB	9,400	8,782	0.93	E	10,742	1.14	F	10,152	**1.08**	**F**	12,418	**1.32**	**F**	3
Btwn Bellflower Boulevard and Lakewood Boulevard	NB	9,400	10,007	1.06	F	8,808	0.94	E	11,568	**1.23**	**F**	10,182	**1.08**	**F**	2
	SB	9,400	9,003	0.96	E	11,012	1.17	F	10,407	**1.11**	**F**	12,730	**1.35**	**F**	3
Btwn Lakewood Boulevard and Cherry Avenue	NB	9,400	11,124	1.18	F	9,397	1.00	E	12,859	**1.37**	**F**	10,863	**1.16**	**F**	3
	SB	9,400	8,941	0.95	E	10,304	1.10	F	10,336	**1.10**	**F**	10,449	**1.11**	**F**	2
Btwn Cherry Avenue and Orange Avenue	NB	9,400	11,161	1.19	F	9,429	1.00	E	12,902	**1.37**	**F**	9,550	**1.02**	**F**	3
	SB	9,400	8,971	0.95	E	10,338	1.10	F	10,370	**1.10**	**F**	11,951	**1.27**	**F**	2
Btwn Orange Avenue and Atlantic Avenue	NB	9,400	11,013	1.17	F	9,303	0.99	E	12,731	**1.35**	**F**	10,754	**1.14**	**F**	3
	SB	9,400	8,851	0.94	E	10,200	1.09	F	10,232	**1.09**	**F**	10,232	**1.09**	**F**	2

Table G: Traffic Growth from Existing Conditions Freeway Level of Service Summary

Freeway Segment	Dir	Capacity	Existing (2018)						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
Btwn Atlantic Avenue and Long Beach Boulevard	NB	9,400	10,938	1.16	F	9,240	0.98	E	12,644	**1.35**	**F**	10,681	**1.14**	**F**	3
	SB	9,400	8,792	0.94	E	10,131	1.08	F	10,164	**1.08**	**F**	11,711	**1.25**	**F**	2
Btwn Long Beach Boulevard and Jct. Rte. 710	NB	9,400	10,455	1.11	F	8,832	0.94	E	12,086	**1.29**	**F**	9,454	**1.01**	**F**	2
	SB	9,400	8,403	0.89	D	9,683	1.03	F	8,751	0.93	E	11,194	**1.19**	**F**	2
I-605															
Btwn Jct. Rte. 405 and Katella Avenue	NB	9,400	6,324	0.67	B	7,153	0.76	C	7,311	0.78	C	8,269	0.88	D	0
	SB	9,400	4,527	0.48	A	5,173	0.55	A	5,233	0.56	A	5,980	0.64	B	0
Btwn Katella Avenue & Orange/ Los Angeles County Line	NB	9,400	6,458	0.69	B	7,484	0.80	C	6,702	0.71	C	7,967	0.85	D	0
	SB	9,400	6,348	0.68	B	5,496	0.58	A	6,533	0.70	B	6,046	0.64	B	0
Btwn Orange/Los Angeles County Line & Spring Street	NB	9,400	7,104	0.76	C	8,232	0.88	D	8,212	0.87	D	8,460	0.90	D	0
	SB	9,400	6,983	0.74	C	6,045	0.64	B	7,016	0.75	C	6,481	0.69	B	0
Btwn Spring Street and Carson Street	NB	9,400	7,674	0.82	D	8,892	0.95	E	8,871	0.94	E	8,911	0.95	E	1
	SB	9,400	7,543	0.80	C	6,530	0.69	B	7,547	0.80	C	6,891	0.73	C	0
Btwn Carson Street and Del Amo Boulevard	NB	9,400	8,282	0.88	D	9,597	1.02	F	9,574	**1.02**	**F**	11,094	**1.18**	**F**	2
	SB	9,400	8,141	0.87	D	7,047	0.75	C	9,411	1.00	E	8,146	0.87	D	1
Btwn Del Amo Boulevard and South Street	NB	9,400	9,346	0.99	E	10,829	1.15	F	10,804	**1.15**	**F**	12,518	**1.33**	**F**	3
	SB	9,400	9,186	0.98	E	7,952	0.85	D	10,619	**1.13**	**F**	9,193	0.98	E	2
Btwn South Street and Jct. Rte. 91	NB	11,750	11,435	0.97	E	13,250	1.13	F	13,219	**1.13**	**F**	15,317	**1.30**	**F**	3
	SB	11,750	11,240	0.96	E	9,730	0.83	D	12,993	**1.11**	**F**	11,248	0.96	E	2
I-710															
Btwn Begin I-710 and Ocean/ Harbor Scenic/Pico Avenue	NB	4,700	3,669	0.78	C	3,577	0.76	C	4,092	0.87	D	3,722	0.79	C	0
	SB	4,700	2,923	0.62	B	3,435	0.73	C	3,264	0.69	B	3,618	0.77	C	0
Btwn Ocean/Harbor Scenic/Pico Avenue and Shoreline Drive	NB	4,700	7,215	1.54	F	7,034	1.50	F	7,638	**1.63**	**F**	7,179	**1.53**	**F**	2
	SB	4,700	5,748	1.22	F	6,755	1.44	F	6,089	**1.30**	**F**	6,938	**1.48**	**F**	2
Btwn Shoreline Drive and Anaheim Street	NB	4,700	8,132	1.73	F	7,928	1.69	F	8,271	**1.76**	**F**	9,562	**2.03**	**F**	3
	SB	4,700	6,478	1.38	F	7,614	1.62	F	7,154	**1.52**	**F**	8,847	**1.88**	**F**	3
Btwn Anaheim Street and Jct. Rte. 1	NB	7,050	9,355	1.33	F	9,120	1.29	F	9,460	**1.34**	**F**	9,619	**1.36**	**F**	2
	SB	7,050	7,452	1.06	F	8,759	1.24	F	8,231	**1.17**	**F**	8,887	**1.26**	**F**	2
Btwn Jct. Rte. 1 and Willow Street	NB	7,050	10,333	1.47	F	10,074	1.43	F	10,410	**1.48**	**F**	10,798	**1.53**	**F**	3
	SB	7,050	8,232	1.17	F	9,675	1.37	F	9,096	**1.29**	**F**	9,924	**1.41**	**F**	2
Btwn Willow Street and Jct. Rte. 405	NB	7,050	6,662	0.94	E	6,890	0.98	E	7,701	**1.09**	**F**	7,675	**1.09**	**F**	1
	SB	7,050	7,444	1.06	F	6,518	0.92	E	8,468	**1.20**	**F**	6,624	0.94	E	2
Btwn Jct. Rte. 405 and Del Amo Boulevard	NB	7,050	6,806	0.97	E	7,038	1.00	E	7,868	**1.12**	**F**	7,922	**1.12**	**F**	1
	SB	7,050	7,604	1.08	F	6,658	0.94	E	8,525	**1.21**	**F**	6,741	0.96	E	2

Table G: Traffic Growth from Existing Conditions Freeway Level of Service Summary

Freeway Segment	Dir	Capacity	Existing (2018)						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
Btwn Del Amo Boulevard and Long Beach Boulevard	NB	11,750	7,128	0.61	B	7,372	0.63	B	7,219	0.61	B	9,346	0.80	C	0
	SB	9,400	7,964	0.85	D	6,973	0.74	C	8,839	0.94	E	8,061	0.86	D	1
Btwn Long Beach Boulevard and Jct. Rte. 91	NB	9,400	8,346	0.89	D	8,631	0.92	E	8,374	0.89	D	9,724	1.03	F	1
	SB	9,400	9,325	0.99	E	8,164	0.87	D	10,726	1.14	F	8,353	0.89	D	2

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per CMP guidelines. Cells shaded with black indicate significant impact.
Btwn = Between
Dir = Direction
EB = eastbound
I-710 = Interstate 710
I-405 = Interstate 405
I-605 = Interstate 605
LOS = level of service
NB = northbound
SB = southbound
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

Table H: Traffic Growth from Existing Conditions State Route Level of Service Summary

Freeway Segment	Dir	Capacity	Existing (2018)						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
SR-1															
Btwn I-710 and Cherry Avenue	EB	5,400	1,271	0.24	A	1,513	0.28	A	1,469	0.27	A	1,749	0.32	A	0
	WB	5,400	1,612	0.30	A	1,411	0.26	A	1,863	0.35	A	1,631	0.30	A	0
Btwn Cherry Avenue and Paramount Boulevard	EB	5,400	1,073	0.20	A	1,146	0.21	A	1,242	0.23	A	1,329	0.25	A	0
	WB	5,400	1,363	0.25	A	1,076	0.20	A	1,583	0.29	A	1,263	0.23	A	0
Btwn Paramount Boulevard and Downey Avenue	EB	3,600	1,390	0.39	A	1,645	0.46	A	2,265	0.63	B	1,821	0.51	A	0
	WB	3,600	1,820	0.51	A	1,352	0.38	A	2,402	0.67	B	1,467	0.41	A	0
Btwn Downey Avenue and Jct. Rte. 19	EB	5,400	1,047	0.19	A	1,721	0.32	A	1,210	0.22	A	1,989	0.37	A	0
	WB	5,400	1,471	0.27	A	1,184	0.22	A	1,700	0.31	A	1,368	0.25	A	0
Btwn Jct. Rte. 19 and Clark Avenue	EB	5,400	1,134	0.21	A	1,792	0.33	A	1,311	0.24	A	2,062	0.38	A	0
	WB	5,400	1,605	0.30	A	1,221	0.23	A	1,823	0.34	A	1,406	0.26	A	0
Btwn Clark Avenue and Bellflower Boulevard	EB	5,400	923	0.17	A	1,658	0.31	A	1,067	0.20	A	1,904	0.35	A	0
	WB	5,400	1,370	0.25	A	1,002	0.19	A	1,583	0.29	A	1,103	0.20	A	0
Btwn Bellflower Boulevard and Jct. Rte. 605	EB	3,600	1,004	0.28	A	1,241	0.34	A	1,123	0.31	A	1,415	0.39	A	0
	WB	3,600	1,155	0.32	A	901	0.25	A	1,337	0.37	A	1,005	0.28	A	0
SR-19															
Btwn I-605 and Orange/Los Angeles County Line	NB	5,400	881	0.16	A	1,609	0.30	A	1,018	0.19	A	1,833	0.34	A	0
	SB	5,400	1,258	0.23	A	1,125	0.21	A	1,323	0.25	A	1,300	0.24	A	0
SR-22															
Btwn Jct. Rte. 405 and Katella Avenue	EB	4,700	1,294	0.28	A	2,635	0.56	A	3,262	0.69	B	3,046	0.65	B	0
	WB	4,700	2,095	0.45	A	2,018	0.43	A	2,422	0.52	A	2,333	0.50	A	0
Btwn Katella Avenue & Orange/ Los Angeles County Line	EB	5,400	2,412	0.45	A	2,259	0.42	A	2,788	0.52	A	2,334	0.43	A	0
	WB	5,400	1,900	0.35	A	1,797	0.33	A	1,968	0.36	A	2,077	0.38	A	0
Btwn Orange/Los Angeles County Line & Spring Street	EB	5,400	2,338	0.43	A	1,967	0.36	A	2,702	0.50	A	1,997	0.37	A	0
	WB	3,600	1,774	0.49	A	1,986	0.55	A	1,823	0.51	A	2,295	0.64	B	0

Source: Compiled by LSA Associates, Inc. (2019).

Btwn = Between
Dir = Direction
EB = eastbound
I-710 = Interstate 710
LOS = level of service
SR-1 = State Route 1
SR-19 = State Route 19
SR-22 = State Route 22
NB = northbound
SB = southbound
V/C = volume-to-capacity
WB = westbound

Table I: Traffic Growth from Existing Land Use Element Conditions Freeway Level of Service Summary

Freeway Segment	Dir	Capacity	General Plan Horizon Year (2040) No Project						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
SR-91															
Btwn I-710 and Cherry Avenue	EB	14,100	11,723	0.83	D	11,652	0.83	D	11,723	0.83	D	11,652	0.83	D	0
	WB	11,750	8,661	0.74	C	6,912	0.59	A	8,661	0.74	C	6,912	0.59	A	0
Btwn Cherry Avenue and Paramount Boulevard	EB	9,400	11,553	1.23	F	11,484	1.22	F	11,553	1.23	F	11,484	1.22	F	2
	WB	9,400	8,536	0.91	E	6,811	0.72	C	8,536	0.91	E	6,811	0.72	C	1
Btwn Paramount Boulevard and Downey Avenue	EB	9,400	11,469	1.22	F	11,399	1.21	F	11,469	1.22	F	11,399	1.21	F	2
	WB	9,400	8,473	0.90	D	6,761	0.72	C	8,473	0.90	D	6,761	0.72	C	0
Btwn Downey Avenue and Jct. Rte. 19	EB	9,400	10,961	1.17	F	10,895	1.16	F	10,961	1.17	F	10,895	1.16	F	2
	WB	9,400	8,098	0.86	D	6,462	0.69	B	8,098	0.86	D	6,462	0.69	B	0
Btwn Jct. Rte. 19 and Clark Avenue	EB	9,400	11,553	1.23	F	11,484	1.22	F	11,553	1.23	F	11,484	1.22	F	2
	WB	9,400	8,536	0.91	E	6,811	0.72	C	8,536	0.91	E	6,811	0.72	C	1
Btwn Clark Avenue and Bellflower Boulevard	EB	11,750	11,426	0.97	E	11,358	0.97	E	12,188	**1.04**	**F**	12,115	**1.03**	**F**	2
	WB	9,400	8,442	0.90	D	6,736	0.72	C	9,005	0.96	E	7,186	0.76	C	1
Btwn Bellflower Boulevard and Jct. Rte. 605	EB	11,750	12,188	1.04	F	12,115	1.03	F	12,188	1.04	F	12,115	1.03	F	2
	WB	9,400	9,005	0.96	E	7,186	0.76	C	9,356	1.00	E	10,494	**1.12**	**F**	2
I-405															
Btwn I-605 and Orange/Los Angeles County Line	NB	9,400	9,497	1.01	F	9,432	1.00	E	9,608	1.02	F	9,432	1.00	E	1
	SB	9,400	9,641	1.03	F	10,201	1.09	F	9,641	1.03	F	10,243	1.09	F	2
Btwn Orange/Los Angeles County Line & Studebaker Road	NB	9,400	9,655	1.03	F	8,855	0.94	E	9,766	1.04	F	8,643	0.92	E	1
	SB	9,400	9,934	1.06	F	12,150	1.29	F	9,934	1.06	F	12,150	1.29	F	2
Btwn Studebaker Road and Palo Verde Avenue	NB	9,400	10,594	1.13	F	8,211	0.87	D	9,253	0.98	E	9,324	0.99	E	1
	SB	9,400	9,531	1.01	F	11,658	1.24	F	9,531	1.01	F	11,658	1.24	F	2
Btwn Palo Verde Ave and Woodruff Ave	NB	9,400	10,797	1.15	F	8,412	0.89	D	9,402	1.00	E	8,238	0.88	D	1
	SB	9,400	9,714	1.03	F	11,881	1.26	F	9,714	1.03	F	11,881	1.26	F	2
Btwn Woodruff Avenue and Bellflower Boulevard	NB	9,400	11,284	1.20	F	8,593	0.91	E	11,284	1.20	F	9,932	**1.06**	**F**	2
	SB	9,400	8,784	0.93	E	12,418	1.32	F	10,152	**1.08**	**F**	12,418	1.32	F	3
Btwn Bellflower Boulevard and Lakewood Boulevard	NB	9,400	11,568	1.23	F	10,182	1.08	F	11,568	1.23	F	10,182	1.08	F	2
	SB	9,400	10,407	1.11	F	12,730	1.35	F	10,407	1.11	F	12,730	1.35	F	3
Btwn Lakewood Boulevard and Cherry Avenue	NB	9,400	12,859	1.37	F	10,863	1.16	F	12,859	1.37	F	10,863	1.16	F	3
	SB	9,400	10,336	1.10	F	10,462	1.11	F	10,336	1.10	F	10,449	1.11	F	2
Btwn Cherry Avenue and Orange Avenue	NB	9,400	12,902	1.37	F	9,548	1.02	F	12,902	1.37	F	9,550	1.02	F	3
	SB	9,400	10,370	1.10	F	11,951	1.27	F	10,370	1.10	F	11,951	1.27	F	2
Btwn Orange Avenue and Atlantic Avenue	NB	9,400	12,731	1.35	F	9,452	1.01	F	12,731	1.35	F	10,754	**1.14**	**F**	3
	SB	9,400	10,232	1.09	F	11,791	1.25	F	10,232	1.09	F	10,232	1.09	F	2

Table I: Traffic Growth from Existing Land Use Element Conditions Freeway Level of Service Summary

Freeway Segment	Dir	Capacity	General Plan Horizon Year (2040) No Project						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
Btwn Atlantic Avenue and Long Beach Boulevard	NB	9,400	12,644	1.35	F	10,681	1.14	F	12,644	1.35	F	10,681	1.14	F	3
	SB	9,400	10,164	1.08	F	11,711	1.25	F	10,164	1.08	F	11,711	1.25	F	2
Btwn Long Beach Boulevard and Jct. Rte. 710	NB	9,400	12,086	**1.29**	**F**	10,210	**1.09**	**F**	12,086	**1.29**	**F**	9,454	**1.01**	**F**	2
	SB	9,400	9,714	**1.03**	**F**	11,194	**1.19**	**F**	8,751	0.93	E	11,194	**1.19**	**F**	2
I-605															
Btwn Jct. Rte. 405 and Katella Avenue	NB	9,400	7,311	0.78	C	8,269	0.88	D	7,311	0.78	C	8,269	0.88	D	0
	SB	9,400	5,233	0.56	A	5,980	0.64	B	5,233	0.56	A	5,980	0.64	B	0
Btwn Katella Avenue & Orange/ Los Angeles County Line	NB	9,400	6,805	0.72	C	8,017	0.85	D	6,702	0.71	C	7,967	0.85	D	0
	SB	9,400	6,619	0.70	B	6,061	0.64	B	6,533	0.70	B	6,046	0.64	B	0
Btwn Orange/Los Angeles County Line and Spring Street	NB	9,400	7,183	0.76	C	8,532	0.91	E	8,212	0.87	D	8,460	0.90	D	0
	SB	9,400	7,127	0.76	C	6,492	0.69	B	7,016	0.75	C	6,481	0.69	B	0
Btwn Spring Street and Carson Street	NB	9,400	8,871	0.94	E	8,955	0.95	E	8,871	0.94	E	8,911	0.95	E	1
	SB	9,400	8,720	0.93	E	6,957	0.74	C	7,547	0.80	C	6,891	0.73	C	0
Btwn Carson Street and Del Amo Boulevard	NB	9,400	9,574	1.02	F	11,094	1.18	F	9,574	1.02	F	11,094	1.18	F	2
	SB	9,400	9,411	1.00	E	8,146	0.87	D	9,411	1.00	E	8,146	0.87	D	1
Btwn Del Amo Boulevard and South Street	NB	9,400	10,804	1.15	F	12,518	1.33	F	10,804	1.15	F	12,518	1.33	F	3
	SB	9,400	12,518	1.33	F	9,193	0.98	E	10,619	1.13	F	9,193	0.98	E	2
Btwn South Street and Jct. Rte. 91	NB	11,750	13,219	1.13	F	15,317	1.30	F	13,219	1.13	F	15,317	1.30	F	3
	SB	11,750	12,993	1.11	F	9,847	0.84	D	12,993	1.11	F	11,248	0.96	E	2
I-710															
Btwn Begin I-710 and Ocean/ Harbor Scenic/Pico Avenue	NB	4,700	4,065	0.86	D	3,721	0.79	C	4,092	0.87	D	3,722	0.79	C	0
	SB	4,700	3,219	0.68	B	3,631	0.77	C	3,264	0.69	B	3,618	0.77	C	0
Btwn Ocean/Harbor Scenic/Pico Avenue and Shoreline Drive	NB	4,700	7,611	1.62	F	7,178	1.53	F	7,638	1.63	F	7,179	1.53	F	2
	SB	4,700	6,044	1.29	F	6,951	1.48	F	6,089	1.30	F	6,938	1.48	F	2
Btwn Shoreline Drive and Anaheim Street	NB	4,700	8,356	1.78	F	9,408	2.00	F	8,271	1.76	F	9,562	**2.03**	**F**	3
	SB	4,700	6,878	1.46	F	8,917	1.90	F	7,154	**1.52**	**F**	8,847	1.88	F	3
Btwn Anaheim Street and Jct. Rte. 1	NB	7,050	9,566	1.36	F	9,435	1.34	F	9,460	1.34	F	9,619	**1.36**	**F**	2
	SB	7,050	7,955	1.13	F	8,953	1.27	F	8,231	**1.17**	**F**	8,887	1.26	F	2
Btwn Jct. Rte. 1 and Willow Street	NB	7,050	10,604	1.50	F	10,622	1.51	F	10,410	1.48	F	10,798	**1.53**	**F**	3
	SB	7,050	8,821	1.25	F	10,016	1.42	F	9,096	**1.29**	**F**	9,924	1.41	F	2
Btwn Willow Street and Jct. Rte. 405	NB	7,050	6,891	0.98	E	7,461	1.06	F	7,701	**1.09**	**F**	7,675	**1.09**	**F**	1
	SB	7,050	8,183	1.16	F	6,775	0.96	E	8,468	**1.20**	**F**	6,624	0.94	E	2
Btwn Jct. Rte. 405 and Del Amo Boulevard	NB	7,050	6,862	0.97	E	7,677	1.09	F	7,868	**1.12**	**F**	7,922	**1.12**	**F**	1
	SB	7,050	8,242	1.17	F	6,892	0.98	E	8,525	**1.21**	**F**	6,741	0.96	E	2

Table I: Traffic Growth from Existing Land Use Element Conditions Freeway Level of Service Summary

Freeway Segment	Dir	Capacity	General Plan Horizon Year (2040) No Project						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
Btwn Del Amo Boulevard and Long Beach Boulevard	NB	11,750	7,441	0.63	B	9,109	0.78	C	7,219	0.61	B	9,346	0.80	C	0
	SB	9,400	8,572	0.91	E	8,061	0.86	D	8,839	0.94	E	8,061	0.86	D	1
Btwn Long Beach Boulevard and Jct. Rte. 91	NB	9,400	8,625	0.92	E	9,408	1.00	E	8,374	0.89	D	9,724	**1.03**	**F**	1
	SB	9,400	9,868	1.05	F	8,191	0.87	D	10,726	**1.14**	**F**	8,353	0.89	D	2

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per CMP guidelines. Cells shaded with black indicate significant impact.
Btwn = Between
Dir = Direction
EB = eastbound
I-710 = Interstate 710
I-405 = Interstate 405
I-605 = Interstate 605
LOS = level of service
NB = northbound
SB = southbound
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

Table J: Traffic Growth from Existing Land Use Element Conditions State Route Level of Service Summary

Freeway Segment	Dir	Capacity	General Plan Horizon Year (2040) No Project						General Plan Anticipated Buildout (2040) With Proposed Project						Additional Lanes for LOS D
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	
SR-1															
Btwn I-710 and Cherry Ave	EB	5,400	1,469	0.27	A	1,749	0.32	A	1,469	0.27	A	1,749	0.32	A	0
	WB	5,400	1,863	0.35	A	1,631	0.30	A	1,863	0.35	A	1,631	0.30	A	0
Btwn Cherry Avenue and Paramount Boulevard	EB	5,400	1,238	0.23	A	1,322	0.24	A	1,242	0.23	A	1,329	0.25	A	0
	WB	5,400	1,590	0.29	A	1,254	0.23	A	1,583	0.29	A	1,263	0.23	A	0
Btwn Paramount Boulevard and Downey Avenue	EB	3,600	2,281	0.63	B	1,815	0.50	A	2,265	0.63	B	1,821	0.51	A	0
	WB	3,600	2,387	0.66	B	1,465	0.41	A	2,402	0.67	B	1,467	0.41	A	0
Btwn Downey Avenue and Jct. Rte. 19	EB	5,400	1,210	0.22	A	1,989	0.37	A	1,210	0.22	A	1,989	0.37	A	0
	WB	5,400	1,700	0.31	A	1,368	0.25	A	1,700	0.31	A	1,368	0.25	A	0
Btwn Jct. Rte. 19 and Clark Avenue	EB	5,400	1,311	0.24	A	2,058	0.38	A	1,311	0.24	A	2,062	0.38	A	0
	WB	5,400	1,808	0.33	A	1,403	0.26	A	1,823	0.34	A	1,406	0.26	A	0
Btwn Clark Avenue and Bellflower Boulevard	EB	5,400	1,067	0.20	A	1,906	0.35	A	1,067	0.20	A	1,904	0.35	A	0
	WB	5,400	1,583	0.29	A	1,091	0.20	A	1,583	0.29	A	1,103	0.20	A	0
Btwn Bellflower Boulevard and Jct. Rte. 605	EB	3,600	1,081	0.30	A	1,418	0.39	A	1,123	0.31	A	1,415	0.39	A	0
	WB	3,600	1,336	0.37	A	1,007	0.28	A	1,337	0.37	A	1,005	0.28	A	0
SR-19															
Btwn I-605 and Orange/Los Angeles County Line	NB	5,400	1,018	0.19	A	1,830	0.34	A	1,018	0.19	A	1,833	0.34	A	0
	SB	5,400	1,454	0.27	A	1,300	0.24	A	1,323	0.25	A	1,300	0.24	A	0
SR-22															
Btwn Jct. Rte. 405 and Katella Avenue	EB	4,700	3,262	0.69	B	3,046	0.65	B	3,262	0.69	B	3,046	0.65	B	0
	WB	4,700	2,422	0.52	A	2,333	0.50	A	2,422	0.52	A	2,333	0.50	A	0
Btwn Katella Avenue & Orange/ Los Angeles County Line	EB	5,400	2,470	0.46	A	2,611	0.48	A	2,788	0.52	A	2,334	0.43	A	0
	WB	5,400	1,946	0.36	A	2,077	0.38	A	1,968	0.36	A	2,077	0.38	A	0
Btwn Orange/Los Angeles County Line & Spring Street	EB	5,400	2,384	0.44	A	2,260	0.42	A	2,702	0.50	A	1,997	0.37	A	0
	WB	3,600	1,801	0.50	A	2,295	0.64	B	1,823	0.51	A	2,295	0.64	B	0

Source: LSA Associates, Inc.

Btwn = Between
Dir = Direction
EB = eastbound
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
SR-1 = State Route 1
SR-19 = State Route 19
SR-22 = State Route 22
NB =northbound
SB = southbound
V/C = volume-to-capacity
WB = westbound

Table K: Freeway Ramp Merge and Diverge Level of Service Summary

	Type	Mainline Lanes	Existing (2018)				General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
SR-91 Eastbound														
Atlantic Avenue On-Ramp	Ramp Merge	5	42.5	D	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
SR-91 Westbound														
Atlantic Avenue Off-Ramp	Ramp Diverge	5	27.9	C	23.2	B	34.0	D	24.2	C	32.5	C	27.2	C
I-405 Northbound														
Lakewood Boulevard On-Ramp	Ramp Merge	4	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
Lakewood Boulevard Off-Ramp	Ramp Diverge	4	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
I-405 Southbound														
Atlantic Avenue Off-Ramp	Ramp Diverge	5	31.3	D	36.4	E	36.5	E	>45.0	F	36.5	E	**>45.0**	**F**
I-605 Northbound														
East Carson Street On-Ramp	Ramp Merge	4	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
East Carson Street Loop On-Ramp	Ramp Merge	4	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
East Carson Street	Ramp Diverge	4	36.2	E	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
I-605 Southbound														
East Carson Street	Ramp Diverge	4	>45.0	F	39.2	D	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
East Carson Street Loop On-Ramp	Ramp Merge	4	41.1	D	34.0	C	>45.0	F	42.5	D	**>45.0**	**F**	42.5	D
East Carson Street On-Ramp	Ramp Merge	4	40.9	D	33.7	C	>45.0	F	42.2	D	**>45.0**	**F**	40.5	D
I-710 Northbound														
SR-1 On-Ramp (WB)	Ramp Merge	3	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
SR-1 Loop Off-Ramp (WB)	Ramp Diverge	3	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
SR-1 Loop On-Ramp (EB)	Ramp Merge	3	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
SR-1 Loop Off-Ramp (EB)	Ramp Diverge	3	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
I-710 Southbound														
SR-1 Off-Ramp (WB)	Ramp Diverge	3	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**
SR-1 On-Ramp (EB)	Ramp Merge	3	>45.0	F	>45.0	F	>45.0	F	>45.0	F	**>45.0**	**F**	**>45.0**	**F**

Source: Compiled by LSA Associates, Inc. (2019).
Note: Shaded cells indicate unsatisfactory LOS per CMP guidelines. Cells shaded with black indicate significant impact.

EB = eastbound
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = levels of service
pc/mi/ln = passenger cars per mile per lane
SR-1 = State Route 1 (Pacific Coast Highway)
SR-91 = State Route 91
WB = westbound

Freeway Ramp Intersections and Arterial State Highway Intersections

Some of the study intersections are freeway ramp intersections or are otherwise under the jurisdiction of Caltrans. These intersections were analyzed using ICU methodology in the previous sections of this report. For disclosure purposes, these intersections were also analyzed using Caltrans-preferred HCM methodology. HCM intersection analysis worksheets are provided in Appendix D.

Some of the intersections included in the sample of Caltrans intersections do not have stop control. For the I-710/SR-1 cloverleaf and the I-710/Anaheim Street cloverleaf, the weaving sections created by the on- and off-ramps are evaluated according to the density of vehicles in the lane-change area. HCM weaving section worksheets are included in Appendix C. The intersections of Lakewood Boulevard/I-405 eastbound ramps and Atlantic Avenue/I-405 westbound ramps are not stop controlled but are located near an adjacent signalized intersection. For these locations, the analysis examined the queues forming at the adjacent intersection to determine whether vehicles exiting the freeway ramp would be blocked by the queue at the adjacent traffic signal. Queuing reports are included in Appendix D. The intersection of Lakewood Boulevard/I-405 westbound ramps is not stop controlled and is not located near another stop controlled intersection. At this location, traffic from the freeway off-ramp is free flowing.

Table L presents the analysis of these intersections in the Existing (2018), 2040 No Project, and 2040 with Proposed Land Use Element conditions. As Table L shows, 6 of the 30 sampled Caltrans intersections operate at unsatisfactory LOS (i.e., beyond LOS E) in the existing condition and would continue to operate at unsatisfactory LOS in the future regardless of the Land Use Element. Two additional intersections function at LOS E or better in existing conditions but would function at LOS F in the future regardless of the Land Use Element.

According to the performance criteria established for this TIA, the project is found to have potentially significant impacts on the following Caltrans intersections according to Caltrans impact criteria (i.e., contribution of traffic to a facility operating in excess of its operational standard). Because this analysis sampled Caltrans intersections, potentially significant traffic impacts may occur at additional intersections not included in the list below.

- Redondo Avenue/Pacific Coast Highway
- Lakewood Boulevard/Del Amo Boulevard
- Lakewood Boulevard/Spring Street
- Lakewood Boulevard/I-405 Eastbound Ramps
- Pacific Coast Highway/Anaheim Street
- I-605 Southbound Ramps/Carson Street

Table L: Freeway Ramp and State Highway Intersection Level of Service Summary

Intersection	Existing (2018)				2040 No Project				2040 with Proposed Land Use Element			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS
1. Avalon Boulevard/Pacific Coast Hwy	37.6	D	35.3	D	50.4	D	47.1	D	50.4	D	46.9	D
5. Terminal Island Freeway (SR-103)/Willow Street	23.0	C	32.6	C	26.5	C	42.5	D	27.2	C	47.3	D
8. Santa Fe Avenue/Pacific Coast Hwy	41.3	D	35.4	D	49.7	D	44.6	D	51.5	D	46.7	D
10. I-710/SR-1 Cloverleaf WB[1]	17.8 pc/mi/ln	B	30.3 pc/mi/ln	D	19.9 pc/mi/ln	B	38.1 pc/mi/ln	E	20.5 pc/mi/ln	C	38.0 pc/mi/ln	E
11. I-710/SR-1 Cloverleaf EB[1]	18.7 pc/mi/ln	B	23.5 pc/mi/ln	C	23.9 pc/mi/ln	C	32.2 pc/mi/ln	C	24.1 pc/mi/ln	C	27.4 pc/mi/ln	C
13. Pacific Avenue/Pacific Coast Hwy	18.9	B	23.5	C	23.9	C	32.2	C	24.1	C	27.4	C
28. Long Beach Boulevard/Pacific Coast Hwy	33.3	C	34.7	C	39.8	D	44.9	D	38.1	D	46.0	D
36. Atlantic Avenue/SR-91 WB Ramps	19.0	B	23.7	C	24.4	C	33.3	C	24.2	C	33.3	C
37. Atlantic Avenue/SR-91 EB Ramps	11.2	B	18.5	B	12.9	B	25.1	C	12.9	B	25.3	C
41. Atlantic Avenue/33rd Street	5.8	A	10.5	B	6.5	A	15.0	B	6.7	A	13.9	B
42. Atlantic Avenue/I-405 EB Ramps	10.7	B	9.6	A	13.4	B	10.8	B	15.2	B	11.4	B
44. Atlantic Avenue/Pacific Coast Hwy	21.7	C	23.9	C	25.9	C	33.0	C	25.8	C	36.7	D
52. Orange Avenue/Pacific Coast Hwy	20.7	C	25.4	C	26.7	C	29.5	C	26.4	C	29.3	C
65. Cherry Avenue/Pacific Coast Hwy	33.5	C	32.7	C	40.6	D	41.6	D	40.7	D	40.4	D
74. Redondo Avenue/Pacific Coast Hwy	66.7	E	67.0	F	97.7	F	99.0	F	**88.0**	**F**	**95.0**	**F**
79. Lakewood Boulevard/Del Amo Boulevard	49.5	D	75.1	E	72.1	E	110.5	F	62.1	E	**110.4**	**F**
80. Lakewood Boulevard/Carson Street	26.8	C	33.8	C	32.4	C	45.6	D	31.8	C	42.2	D
81. Lakewood Boulevard/Spring Street	78.3	E	125.2	F	121.6	F	181.9	F	**134.8**	**F**	**197.5**	**F**
82. Lakewood Boulevard/I-405 WB Ramps[2]	N/A[3]		N/A[3]		N/A[3]		N/A[3]		N/A[3]		N/A[3]	
83. Lakewood Boulevard/I-405 EB Ramps[2,4]	Not Blocked		Blocked		Blocked		Blocked		**Blocked**		**Blocked**	
85. Ximeno Avenue/Pacific Coast Hwy	54.0	D	56.5	E	56.5	E	72.9	E	55.5	E	66.8	E
91.Pacific Coast Hwy/Anaheim Street	71.3	E	80.1	F	188.4	F	100.2	F	**194.5**	**F**	**100.5**	**F**
92. Pacific Coast Hwy/7th Street	46.7	D	41.5	D	70.1	E	57.0	E	69.6	E	62.4	E
99. Bellflower Boulevard/Pacific Coast Hwy	19.5	B	23.3	C	25.1	C	26.4	C	25.1	C	26.5	C
100. Pacific Coast Hwy/2nd Street	47.4	D	48.7	D	69.8	E	70.0	E	69.6	E	69.9	E
112. I-605 SB Ramps/Carson Street	13.5	B	44.9	D	22.0	C	141.0	F	22.0	C	**87.2**	**F**
113. I-605 NB Ramps/Carson Street	11.2	B	12.5	B	12.1	B	15.9	B	12.2	B	15.6	B
118. Atlantic Avenue/I-405 WB Ramps[2,4]	Not Blocked		Blocked		Not Blocked		Blocked		Not Blocked		Blocked	

Table L: Freeway Ramp and State Highway Intersection Level of Service Summary

Intersection	Existing (2018)				2040 No Project				2040 with Proposed Land Use Element			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS
119. I-710/Anaheim Street Cloverleaf WB[1]	12.7 pc/mi/ln	B	11.4 pc/mi/ln	B	16.2 pc/mi/ln	B	14.5 pc/mi/ln	B	17.0 pc/mi/ln	B	14.7 pc/mi/ln	B
120. I-710/Anaheim Street Cloverleaf EB[1]	22.6 pc/mi/ln	C	29.8 pc/mi/ln	D	31.3 pc/mi/ln	D	38.4 pc/mi/ln	E	31.8 pc/mi/ln	D	38.7 pc/mi/ln	E

Source: Compiled by LSA Associates, Inc. (2019).
Notes: Shaded cells indicate unsatisfactory LOS per CMP guidelines. Cells shaded with black indicate significant impact.
Delay is reported in seconds.
[1] Analyzed as a weaving segment. Value is density in passenger cars/lane/mile.
[2] No stop control is present at this interchange.
[3] This intersection is not subject to LOS analysis.
[4] 95th percentile queue at the adjacent intersection could impede off-ramp traffic and was examined as part of the operational analysis.
EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
ICU = Intersection Capacity Utilization
LOS = level of service\NB = northbound
pc/mi/ln = passenger cars per mile per lane
SB = southbound
SR-1 = State Route 1
WB = westbound

On-Ramps and Off-Ramps

As requested by Caltrans, this TIA compared the forecast volume of on-ramps and off-ramps within the study area to the lane recommendations in the HDM. This comparison is provided in Table M. All on-ramps with design year volumes exceeding 900 vehicles per hour have multi-lane ramps in the existing condition. All off-ramps with design year volumes exceeding 1,500 vehicles per hour have two-lane ramps in the existing condition. The on- and off-ramps in the study area meet the HDM design guidelines.

VEHICLE MILES TRAVELED

The 2016 SCAG RTP/SCS provided calculations of VMT derived from the Regional Travel Demand Model. The data were presented in terms of daily VMT per capita for the entire region and by county in the model base year, future (2040 Baseline) without the RTP, and future (2040 with RTP/SCS) with the RTP. Table N summarizes this SCAG VMT data.

Table N also displays per-capita VMT data for Long Beach. These data were not included in the 2016 RTP/SCS but were developed using the Regional Travel Demand Model and present an equivalent comparison. It should be noted that the 2040 Baseline model was not available for calculating the City's VMT in that scenario. VMT is attributed to a jurisdiction based on where trips begin and end. If both the origin and destination are in the same jurisdiction, then all of the VMT is attributed to that jurisdiction. If the origin and destination are in different jurisdictions, then each end is attributed with half of the VMT. If trips are passing through a jurisdiction and neither the origin nor destination are in the jurisdiction, none of the VMT is attributed to that jurisdiction. Using this methodology avoids double counting regional VMT.

As the data shows, VMT per capita is anticipated to decline regionally in the future as a result of previous planning efforts and is anticipated to decline further due to the elements of the 2016 SCAG RTP/SCS, which the proposed project would help to implement at the local level. VMT per capita in Long Beach is lower in the existing condition than in Los Angeles County as a whole and lower than the entire SCAG region. With implementation of the 2016 RTP/SCS, VMT per capita in Long Beach is anticipated to decline even further and will continue to be lower than the region as a whole or in Los Angeles County.

As mentioned previously, the Regional Travel Demand Model was used to analyze the effects of changes to the location of land uses proposed in the Land Use Element. Socioeconomic data for housing, employment, and population were adjusted within the model's traffic analysis zones consistent with the Land Use Element adjustments to the location of land use density. These changes to the model resulted in changes to traffic volumes (as described above) and changes in VMT. Table O presents a comparison of Long Beach VMT in absolute terms, per capita, and per household in existing base year, future (2040 No Project) with the existing land use element, and future (2040 with LUE) with the changes proposed in the Land Use and Urban Design Elements.

Table M: On-Ramp and Off-Ramp Volume and Recommended Lanes

Intersection	Design Year Volume		Multi-Lane Ramp Warranted	Multi-Lane Ramp Provided	Auxiliary Lane Warranted/Provided
	AM	PM			
10. I-710/SR-1 Cloverleaf WB[1]					
On-ramp to NB I-710	134	67	No	No	No
Off-ramp from NB I-710	87	60	No	No	No
On-ramp to SB I-710	130	67	No	No	No
Off-ramp from SB I-710	441	431	No	No	No
11. I-710/SR-1 Cloverleaf EB[1]					
On-ramp to SB I-710	409	560	No	No	No
Off-ramp from SB I-710	353	477	No	No	No
On-ramp to NB I-710	436	711	No	No	No
Off-ramp from NB I-710	148	155	No	No	No
36. Atlantic Avenue/SR-91 WB Ramps					
Off-ramp	491	817	No	Yes	No
On-ramps to I-710 and SR-91	985	490	Yes	Yes	No
37. Atlantic Avenue/SR-91 EB Ramps					
Off-ramp	332	845	No	Yes	No
On-ramp	620	817	No	Yes	No
118. Atlantic Avenue/I-405 WB Ramps					
Off-ramp to NB Atlantic Avenue	224	488	No	No	No
On-ramp from NB Atlantic Avenue	254	315	No	No	No
On-ramp from SB Atlantic Avenue	331	242	No	No	No
Off-ramp to SB Atlantic Avenue	270	244	No	No	No
42. Atlantic Avenue/I-405 EB Ramps					
Off-ramp	637	615	No	No	No
On-ramp from SB Atlantic Avenue	331	242	No	No	No
On-ramp from NB Atlantic Avenue	364	266	No	No	No
82. Lakewood Boulevard/I-405 WB Ramps					
Off-ramp to NB Lakewood Boulevard	480	510	No	No	No
Off-ramp to SB Lakewood Boulevard	240	303	No	Yes	No
On-ramp from SB Lakewood Boulevard	541	610	No	Yes	No
On-ramp from NB Lakewood Boulevard	1,097	744	Yes	Yes	No
83. Lakewood Boulevard/I-405 EB Ramps					
On-ramp from SB Lakewood Boulevard	359	513	No	Yes	No
Off-ramp to Willow Street	817	594	No	No	No
Off-ramp to SB Lakewood Boulevard	831	717	No	No	No
112. I-605 SB Ramps/Carson Street					
Off-ramp	1,448	1,978	Yes	Yes	Yes/Yes
On-ramp from WB Carson Street	449	298	No	No	No
On-ramp from EB Carson Street	134	255	No	Yes	No
113. I-605 NB Ramps/Carson Street					
Off-ramp	846	998	No	No	No
On-ramp from WB Carson Street	940	767	Yes	Yes	No
On-ramp from EB Carson Street	1,006	821	Yes	Yes	No
119. I-710/Anaheim Street Cloverleaf WB					
On-ramp to NB I-710	226	239	No	No	No
Off-ramp from NB I-710	118	125	No	No	No
On-ramp to SB I-710	442	470	No	No	No
Off-ramp from SB I-710	173	183	No	No	No

Table M: On-Ramp and Off-Ramp Volume and Recommended Lanes

Intersection	Design Year Volume		Multi-Lane Ramp Warranted	Multi-Lane Ramp Provided	Auxiliary Lane Warranted/Provided
	AM	PM			
120. I-710/Anaheim Street Cloverleaf EB					
On-ramp to SB I-710	248	263	No	No	No
Off-ramp from SB I-710	648	690	No	No	No
On-ramp to NB I-710	804	854	No	No	No
Off-ramp from NB I-710	213	226	No	No	No

Source: Compiled by LSA Associates, Inc. (2019).
EB = eastbound
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
NB = northbound
SB = southbound
SR-1 = State Route 1 (Pacific Coast Highway)
SR-91 = State Route 91
WB = westbound

Table N: Regional Per-Capita VMT Comparison

	Existing Base Year	2040 Baseline[1]	2040 with RTP/SCS
SCAG Region	22.8	22.1	20.5
Los Angeles County	21.5	20.2	18.4
Long Beach	19.9	–	18.0

Source: SCAG Regional Travel Demand Model
[1] 2040 regional planning horizon year baseline analysis prepared by SCAG for Comparison with 2016 SCAG RTP/SCS to project VMT without the RTP/SCS
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments
VMT =vehicle miles traveled

Table O: Long Beach VMT

	Existing Base Year	2040 No Project with Existing Land Use Element	2040 with Proposed Land Use Element	Percentage Change	
				From Existing Land Use Element[1]	From Existing Base Year
Citywide Peak Period VMT[2]	4,635,625	4,306,500	4,276,489	(1%)	(8%)
Citywide Off-Peak VMT[2]	4,846,627	4,600,132	4,751,838	3%	(2%)
Citywide Daily VMT[2]	9,482,252	8,906,632	9,028,327	1%	(5%)
VMT per Capita[3]	19.9	18.0	18.2	1%	(9%)
VMT per Household[4]	56.9	49.9	46.1	(8%)	(19%)

Source: Southern California Association of Governments Regional Travel Demand Model
[1] Provided for information and disclosure purposes only.
[2] Regional Travel Demand Model traffic analysis zones do not terminate at city limits. Citywide data reflects the total in all traffic analysis zones for which any portion is within Long Beach city limits.
[3] Regional Travel Demand Model traffic analysis zones do not terminate at city limits. Per capita ratio is the total VMT in all traffic analysis zones for which any portion is within Long Beach divided by the total population in those traffic analysis zones, which is greater than the Long Beach population.
[4] Regional Travel Demand Model traffic analysis zones do not terminate at city limits. Per household ratio is the total VMT in all traffic analysis zones for which any portion is within Long Beach divided by the total households in those traffic analysis zones, which is greater than the Long Beach household.
VMT = vehicle miles traveled

Similar to the trend shown in the 2016 RTP/SCS, VMT in Long Beach is projected to decline as a result of planning efforts. In absolute terms, VMT in Long Beach will be reduced from 9,482,252 per day in the existing condition to 9,028,327 with the Proposed Land Use and Urban Design Elements (a 5 percent decrease). The population will increase as VMT declines, resulting in VMT per capita declining from 19.9 per day to 18.2 per day (a 9 percent decrease). It should be noted that the traffic model data predict slightly higher VMT per capita with the Land Use Element than with the current distribution of land uses, as explained further below.

Table O shows that the land use changes proposed in the Land Use Element result in more efficient travel during the morning and evening peak commute hours (i.e., lower VMT during the peak periods). However, VMT during off-peak times increases slightly with the Land Use Element as compared to the existing Land Use Element. These off-peak VMT are generated by discretionary trips, which the traffic model calculates based on the number of households. In other words, the model assumes that people living in overcrowded housing conditions generate fewer trips to the grocery store than the same number of people living in less-crowded, separate housing. Because the Land Use Element reduces overcrowding compared to the previous land use distribution, the number of discretionary trips increases as does the off-peak VMT and, subsequently, the total VMT. The existing VMT per household is 56.9 per day, which is anticipated to decline in the future to 49.9 per day without the Land Use Element. The efficiency of the distribution of land uses in the Land Use Element would reduce this further to 46.1 VMT per day per household (a 19-percent decrease from existing conditions and an 8 percent decrease from the existing Land Use Element).

The State of California has concurrent goals of reducing VMT and increasing housing supply to improve affordability and accommodate the workforce. The proposed Land Use and Urban Design Elements increase the number of housing units to reduce overcrowding in Long Beach. The efficiency of the location of land uses in the Land Use Element (i.e., infill development policies and sites) results in a 19 percent decrease in VMT per household compared to existing conditions. Other measures of VMT, including per capita and absolute terms, decline as well compared to existing conditions. With the Land Use and Urban Design Elements, VMT per capita in Long Beach remains lower than the region as a whole and lower than Los Angeles County. The City believes that the proposed General Plan strikes the appropriate balance between the State's concurrent goals of reducing VMT and increasing housing supply.

MITIGATION MEASURES

The analysis above identified potentially significant traffic impacts to vehicle LOS at intersections in Long Beach, intersections in neighboring cities, Caltrans intersections, and freeway facilities. Of the 120 intersections included in the study area, 48 of them (40 percent) would be significantly impacted by traffic volume increases between existing and future conditions. This TIA considered the physical improvements necessary for impacted intersections to function at LOS D with projected future traffic volumes. These improvements are listed in Table P.

This TIA also considered the constraints to constructing the physical improvements. Constraints could include the intersection being located outside of the City's jurisdiction, which eliminates the City's authority to compel physical improvements. Physical improvements located outside of the existing right-of-way could be infeasible or result in increased environmental impacts.

Table P: Potential Mitigation for Impacts to Intersections

Intersection	Jurisdiction	Capacity Addition from Existing	Feasible	Reason Infeasible
4. Wilmington Avenue/223rd Street	Carson	SBR, EBL	No	Outside jurisdiction
7. Santa Fe Avenue/Willow Street	Long Beach	3rd EBT, 3rd WBT	No	Outside right-of-way, removal of structures
19. Pacific Avenue/Ocean Boulevard	Long Beach	4th and 5th WBT	No	Outside right-of-way, removal of parking
20. Long Beach Boulevard/Alondra Boulevard	Compton	NBR, 3rd EBT	No	Outside jurisdiction, outside right-of-way, removal of structures
21. Long Beach Boulevard/Artesia Boulevard	Long Beach	3rd EBT	No	Conflicts with other travel modes (bicycle)
25. Long Beach Boulevard/Wardlow Road	Long Beach	2nd NBL, 2nd EBL	No	Outside right-of-way, removal of structures
26. Long Beach Boulevard/Spring Street	Long Beach	3rd/4th NBT, NBR, 2nd SBL, 3rd/4th SBT, SBR, 2nd EBL, 3rd/4th EBT, 2nd WBL, 3rd WBT	No	Outside right-of-way, removal of structures, removal of parking
30. Long Beach Boulevard/7th Street	Long Beach	2nd NBL, 3rd NBT, 3rd SBT, 4th/5th WBT	No	Outside right-of-way, removal of structures, conflicts with other travel modes
38. Atlantic Avenue/Artesia Boulevard	Long Beach	3rd EBT	No	Outside right-of-way
43. Atlantic Avenue/Willow Street	Long Beach	EBR	No	Outside right-of-way, removal of structures
51. Orange Avenue/Wardlow Road	Long Beach	EBR	No	Outside right-of-way, removal of structures
53. Alamitos Avenue/Anaheim Street	Long Beach	2nd NBT, 2nd SBT	No	Conflicts with other travel modes (bicycle)
54. Alamitos Avenue/7th Street	Long Beach	WBR	No	Conflicts with other travel modes (bicycle), outside right-of-way, removal of parking
55. Alamitos Avenue/6th Street	Long Beach	3rd SBT, 2nd/3rd WB	No	Conflicts with other travel modes (bicycle), outside right-of-way, removal of parking
56. Alamitos Avenue/3rd Street	Long Beach	2nd SBT	No	Conflicts with other travel modes (bicycle)
57. Alamitos Avenue/Broadway	Long Beach	NBR	No	Conflicts with other travel modes (bicycle), outside right-of-way, removal of structure
59. Cherry Avenue/Artesia Boulevard	Long Beach	3rd EBT	No	Conflicts with other travel modes (bus), removal of parking
60. Cherry Avenue/Market Street	Long Beach	NBR, 3rd EBT	No	Outside right-of-way, removal of parking
61. Cherry Avenue/Del Amo Boulevard	Long Beach/ Lakewood	2nd SBL	No	Outside jurisdiction
62. Cherry Avenue/Carson Street	Long Beach	4th NBT	No	Outside right-of-way, removal of structures
66. Cherry Avenue/7th Street	Long Beach	EBR	No	Outside right-of-way, removal of parking
68. Paramount Boulevard/South Street	Long Beach	EBR	No	Conflicts with other travel modes (trucks)
69. Paramount Boulevard/Del Amo Boulevard	Lakewood	NBR, 3rd EBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
70. Paramount Boulevard/Carson Street	Lakewood	WBR	No	Outside jurisdiction, outside right-of-way
71. Downey Avenue/Alondra Boulevard	Lakewood	EBR	No	Outside jurisdiction, removal of parking

Table P: Potential Mitigation for Impacts to Intersections

Intersection	Jurisdiction	Capacity Addition from Existing	Feasible	Reason Infeasible
72. Redondo Avenue/Spring Street	Long Beach	4th EBT, EBR	No	Outside right-of-way, removal of structures
74. Redondo Avenue/Pacific Coast Hwy	Caltrans	NBR, 3rd SBT, 4th EBT, 4th WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
75. Redondo Avenue/Anaheim Street	Long Beach	3rd NBT, 3rd SBT, SBR, EBR	No	Outside right-of-way, removal of structures
76. Redondo Avenue/7th Street	Long Beach	3rd EBT, EBR, 3rd WBT, WBR	No	Outside right-of-way, removal of structures, removal of parking
79. Lakewood Boulevard/Del Amo Boulevard	Long Beach	2nd NBL, NBR, 2nd SBL, 4th EBT, 3rd WBT	No	Outside right-of-way, conflicts with flood control
81. Lakewood Boulevard/Spring Street	Long Beach	3rd SBL, 4th SBT	No	Outside right-of-way, conflicts with flood control
84. Lakewood Boulevard/Willow Street	Long Beach	SBR, 4th EBT	No	Outside right-of-way, removal of structures
86. Ximeno Avenue/7th Street	Long Beach	3rd EBT, 3rd WBT	No	Outside right-of-way, removal of structures
88. Park Avenue/7th Street	Long Beach	3rd EBT, 3rd WBT	No	Outside right-of-way, removal of structures
91. Pacific Coast Hwy/Anaheim Street	Caltrans	2nd NBL	No	Outside jurisdiction, conflicts with other travel modes (bicycle), removal of open space
92. Pacific Coast Hwy/7th Street	Caltrans	3rd SBL, 4th EBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
93. Bellflower Boulevard/ Del Amo Boulevard	Long Beach/ Lakewood	3rd NBT, 3rd EBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
94. Bellflower Boulevard/Carson Street	Long Beach/ Lakewood	3rd NBT, EBR	No	Outside jurisdiction, outside right-of-way, removal of open space
98. Bellflower Boulevard/7th Street	Long Beach	WBR	No	Outside right-of-way, removal of structures
100. Pacific Coast Hwy/2nd Street	Caltrans	NBR, 4th EBT, 4th WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
104. East Campus Road/7th Street	Long Beach	4th EBT	No	Outside right-of-way, removal of structures
109. Studebaker Road/Willow Street	Long Beach	NBR, WBR	No	Outside right-of-way, removal of open space
110. 7th Street/College Park Drive	Long Beach	2nd NBT	No	Outside right-of-way
111. Studebaker Road/2nd Street	Long Beach	3rd EBL	No	Outside right-of-way
114. Norwalk Boulevard/Carson Street	Hawaiian Gardens	3rd EBT	No	Outside jurisdiction, conflicts with other travel modes (bus)
115. Norwalk Boulevard/Cerritos Avenue	Los Alamitos	NBR, 3rd SBT, 3rd EBT	No	Outside jurisdiction, outside right-of-way
116. Los Alamitos Boulevard/Katella Avenue	Garden Grove	4th NBT, 4th SBT, 4th EBT, 4th WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
117. Seal Beach Boulevard/ Westminster Road	Seal Beach	4th NBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures

Source: Compiled by LSA Associates, Inc. (2019).

Caltrans = California Department of Transportation
EBL = eastbound left-turn lane
EBR = eastbound right-turn land
ELT = eastbound through lane
Hwy = Highway
NBL = northbound left-turn lane
NBR = northbound right-turn lane
NBT = northbound through lane
SBL = southbound left-turn lane
SBR = southbound right-turn lane
SBT = southbound through lane
WBL = westbound left-turn lane
WBR = westbound right-turn lane
WBT = westbound through lane

Physical improvements outside of existing right-of-way would be further challenged if impacting existing structures or open space. Constraints could also exist if improvements could be completed within the existing right-of-way but would conflict with other travel modes. The Mobility Element states that "the City may accept levels of service below the City standard of D in exchange for pedestrian, bicycle, and/or transit improvements. This balanced approach will help the City create a more balanced multimodal transportation system that supports appropriate infill projects and transit-oriented development strategies." Table P identifies whether these constraints are present at each of the impacted intersections.

As Table P shows, all of the physical improvements necessary for impacted intersections to function at LOS D are subject to constraints that render the addition of vehicle capacity infeasible. Capacity enhancement of freeway facilities is also infeasible because the City cannot compel Caltrans to make improvements. In addition, Table G and Table I show that up to 6 additional travel lanes might be necessary on freeways that are between 6 to 10 lanes today. Additionally, capacity enhancements to freeway facilities to accommodate peak hour traffic volume may not be effective as additional traffic could be attracted from the shoulder periods (i.e., time periods just before or after peak periods).

If the addition of capacity is infeasible to mitigate the impacts to the volume-to-capacity ratio at an intersection or freeway facility, a reduction in traffic volume may mitigate the impact. The Mobility Element presents a number of Implementation Measures designed to promote mobility by supporting all travel modes, including walking, bicycling, and use of transit, thereby reducing the number of automobile trips on the roadway network. Executing Mobility of People Implementation Measure (MOP IM) 1 through MOP IM-60 would have an effect on managing travel demand, reducing the volume of vehicle traffic, decreasing the volume-to-capacity ratio at City intersections, and improving vehicle LOS. The implementation measures are:

- **MOP IM-1:** Develop a street design standards manual to reflect the new street typologies that incorporate the concept of complete streets.

- **MOP IM-2:** Routinely incorporate complete streets features into all street redesign and repaving projects.

- **MOP IM-3:** Provide neighborhood and business groups the opportunity to review preliminary plans for major street improvements included in this plan before final design and implementation.

- **MOP IM-4:** Develop a Citywide Pedestrian Master Plan that establishes a basic inventory of pedestrian infrastructure, comprehensively prioritizes pedestrian improvements, furthers the intent of the place-type designations, makes connections to other modes of travel, promotes public health, and connects with open space features.

- **MOP IM-5:** Create walking loops with stepping-stone mile markers and other supportive features to support active living.

- **MOP IM-6:** Continue to implement programs to promote pedestrian safety through outreach to both pedestrians and motorists.
- **MOP IM-7:** Create separated lanes for pedestrians and cyclists for the entire length of the beach path.
- **MOP IM-8:** Use Neighborhood Traffic Control techniques when excessive vehicle speed, excessive volume, or pedestrian/vehicle safety concerns warrant them.
- **MOP IM-9:** Implement midblock crossings and traffic calming as needed in the more suburban locations of the City where larger blocks and wider streets inhibit pedestrians.
- **MOP IM-10:** Design safer streets by using traffic calming techniques (such as roundabouts and sidewalk extensions) and by providing more frequent and innovative crosswalks, pedestrian signals, and clearly marked bicycle lanes.
- **MOP IM-11:** Continuously implement new technology to improve the pedestrian environment.
- **MOP IM-12:** Actively seek funding to implement the Pedestrian and Bicycle Master Plans.
- **MOP IM-13:** Implement a Citywide bikeshare program.
- **MOP IM-14:** Develop an on-street bike parking (i.e., bike corrals) program, including standards and procedures.
- **MOP IM-15:** Strengthen existing development standards for bike parking at new commercial and multifamily developments.
- **MOP IM-16:** Implement the City's Metro Blue Line Bicycle and Pedestrian Access Plan.
- **MOP IM-17:** Address bicycle safety and access in the design and maintenance of all street projects.
- **MOP IM-18:** Whenever capital improvement projects are constructed at intersections, vehicle actuation should detect bicycles.
- **MOP IM-19:** Identify and analyze locations with a high number of bicycle crashes and implement appropriate engineering, education, enforcement, and countermeasures.
- **MOP IM-20:** Use "sharrow" marking on all existing and proposed Class III facilities, as feasible.
- **MOP IM-21:** Institutionalize the Bicycle-Friendly Business Districts and Bike Saturday campaign in Long Beach.
- **MOP IM-22:** Continue to conduct annual bike counts, walk audits, and other data collection and analysis related to bicycle facilities for program evaluation and to support grant-making efforts.

- **MOP IM-23:** Develop a policy for retrofitting existing automobile parking spaces for bike parking at existing commercial and multifamily developments.
- **MOP IM-24:** Coordinate and collaborate with local school districts to provide enhanced, safer bicycle and pedestrian connections to school facilities throughout Long Beach.
- **MOP IM-25:** Continue to upgrade the City's designation as a bike-friendly city to Platinum status.
- **MOP IM-26:** Participate in and support Citywide events to promote bicycling, such as National Car-Free Day, Bike to- Work Day, Bike Saturday, and Park[ing] Day, women on bikes, and bike buddy.
- **MOP IM-27:** Pilot an "individualized marketing campaign" to help residents to choose safe, convenient routes to replace automobile trips with bicycling and transit trips.
- **MOP IM-28:** Actively support ciclovias (i.e., bike festivals) and other "open street" activities in Long Beach.
- **MOP IM-29:** Continue to support the Bikestation and encourage the development of small-scale bike-transit hubs throughout the City of Long Beach.
- **MOP IM-30:** Ensure that all planning processes, such as neighborhood and specific plans, identify areas where pedestrian, bike, and transit improvements can be made, such as new connections, increased sidewalk width, improved crosswalks, improved lighting, and new street furniture.
- **MOP IM-31:** Continue to strengthen the marketing and promotion of nonautomobile transportation to residents, employees, and visitors.
- **MOP IM-32:** Routinely integrate the financing, design, and construction of pedestrian facilities with street projects. Build pedestrian improvements at the same time as improvements for vehicular circulation.
- **MOP IM-33:** Continue to implement pedestrian streetscape designs, especially on streets with projected excess vehicle capacity, to reduce either the number of travel lanes or the roadway width, and use the available public rights-of-way to provide wider sidewalks, bicycle lanes, transit amenities, or landscaping.
- **MOP IM-34:** Convert electricity transmission corridors to parks, as resources and leases become available.
- **MOP IM-35:** Establish Rails to Trails Program to repurpose, share, or reconfigure surplus rights-of-way to greenbelts with bicycles and pedestrian facilities.

- **MOP IM-36:** Establish a Pavement to Plazas Program to realign irregular intersections and repurpose surplus public rights-of-way for public space.
- **MOP IM-37:** Actively support and assist Long Beach Transit in the implementation of design guidelines for bus shelters and other bus stop amenities.
- **MOP IM-38:** Include Long Beach Transit early in the City's Site Plan Review process to ensure transit facilities are well integrated into the development project.
- **MOP IM-39:** Actively support and assist Long Beach Transit's development of a strategic action plan for future transit service.
- **MOP IM-40:** Actively support and assist Long Beach Transit's expansion of real-time transit information at bus shelters and expand smart phone applications and other new technology.
- **MOP IM-41:** Actively support and assist Long Beach Transit's establishment of mini-transit hubs throughout the City that provide multimodal connectivity.
- **MOP IM-42:** Establish interagency transit hubs and Park and Rides in northern half of the City.
- **MOP IM-43:** Actively support and assist Metro to expand the existing Park and Ride facilities at Metro Blue Line stations.
- **MOP IM-44:** Actively support Long Beach Transit's efforts to expand the Universal Access Pass Program to major employers and business districts.
- **MOP IM-45:** Continue to explore the feasibility of bus rapid transit and a streetcar system in Long Beach.
- **MOP IM-46:** Continue to implement transit-priority traffic signals.
- **MOP IM-47:** Investigate the feasibility of establishing a street car or other type of personal rapid transit system in Long Beach. This system is proposed as a long-term community asset that will enhance nonautomobile connectivity between neighborhoods; bus, rail, and water transit hubs; and the Downtown core.
- **MOP IM-48:** As a pilot program, apply interim Multimodal Level of Service (MMLOS) standards for development proposals Downtown.
- **MOP IM-49:** Actively promote and develop plans for the extension of the Metro Green Line Station to the Blue Line Willow Station to increase regional connectivity.
- **MOP IM-50:** Review all capital improvement projects to ensure improvements located on existing and planned bus routes include modification of street, curb, and sidewalk configurations to allow for easier and more efficient bus operation and improved passenger access and safety while maintaining overall pedestrian and bicycle safety and convenience.

- **MOP IM-51:** Ensure that the City's Transportation Impact Fee Program provides adequate funding for necessary transportation improvements that will benefit all travel modes, while also incentivizing development that is less dependent on expensive, new transportation infrastructure.

- **MOP IM-52:** Review and, if necessary, update the City's Transportation Impact Fee Program to ensure that funding is provided for necessary transportation improvements that will benefit all travel modes.

- **MOP IM-53:** Integrate financing and implementation of pedestrian, bicycle, and transit improvement projects with other related street modifications projects.

- **MOP IM-54:** Participate with local, regional, State and federal agencies, and other organizations.

- **MOP IM-55:** Support the casual carpool system by enhancing existing facilities and amenities. If necessary, the carpool facilities should be reconfigured or relocated to equally convenient locations.

- **MOP IM-56:** When industry best practice has been established, adopt a MMLOS standard.

- **MOP IM-57:** Develop a program to regularly evaluate traffic collision data. Identify top collision locations for automobiles, bicycles, and pedestrians, and develop appropriate countermeasures.

- **MOP IM-58:** Develop street and alley vacation guidelines.

- **MOP IM-59:** Create a mechanism to adjust the pricing and hours of availability and turnover of on-street parking consistent with the cost of parking garages and demand.

- **MOP IM-60:** Revise current parking space requirements to reflect shared parking and park-once policies.

Consistent with MOP IM-51 and MOP IM-52, the City is currently engaged in updating the Transportation Impact Fee Program to provide for improved mobility (including pedestrian and bicycle infrastructure) and otherwise manage travel demand. However, the timing and effectiveness of improvements funded through the Transportation Impact Fee Program are not known at this time. The effect of all of the measures identified in the Mobility Element on individual intersection LOS cannot be guaranteed because they rely on the changing attitudes and actions of many commuters. In addition, when some automobile trips are converted into alternative modes, some automobile trips that would otherwise have been discouraged by congestion may occur. Therefore, although these measures would contribute to a reduced vehicle LOS, their effects cannot be quantified and they cannot be considered mitigation for the impacted freeway facilities and 48 impacted intersections for the purposes of CEQA.

Individual projects generating more than 100 vehicle trips per day would be required by the City's *TIA Guidelines* to analyze that project's potential traffic impacts and mitigation at any intersection where the project contributes 50 or more peak hour trips. This finer grained analysis may identify

feasible mitigation, particularly at adjacent intersections where vacation of necessary right-of-way could be part of the project description. However, revised CEQA guidelines will remove vehicle LOS from consideration as an environmental impact for all jurisdictions by July 1, 2020. While analysis and reduction of a project's potential VMT may reduce traffic volume, it is possible that the automobile LOS deficiencies identified in this TIA would not be addressed. Therefore, the following mitigation measure is recommended to reduce the level of traffic impacts.

Mitigation Measure T-1

Prior to approval of any project that is forecast to generate 100 or more peak-hour trips, as determined by the City of Long Beach (City) Traffic Engineer, the property owners/developers shall prepare a traffic improvement analysis of any facilities under the jurisdiction of Caltrans at which the project is anticipated to contribute 50 or more peak-hour trips, analyzing the impact on such state transportation facilities where Caltrans has previously prepared a valid traffic study, as identified below, and identified feasible operational and physical improvements and has determined the associated fees necessary to mitigate project-related impacts. The fair share cost of such improvements shall be assessed if transportation analysis demonstrates such improvements can achieve vehicle level of service (LOS) D (as measured by Intersection Capacity Utilization or Highway Capacity Manual methodology) or an improved vehicle level of service, if LOS D cannot be feasibly achieved. The Conditions of Approval for the project shall require the property owner/developer to construct, bond for, or pay reasonable fair share fees to the City who will work jointly with Caltrans to implement such improvements, unless alternative funding sources have been identified.

In the event that Caltrans prepares a valid study, as defined below, that identifies fair share contribution funding sources attributable to and paid from private development to supplement other regional and State funding sources necessary to undertake improvements of impacted state transportation facilities, then the project applicant shall use reasonable efforts to pay the applicable fair share amount to Caltrans. The study shall be reviewed and approved by the California Transportation Commission. It shall include fair share contributions related to private development based on nexus requirements contained in the Mitigation Fee Act (Govt. Code § 66000 et seq.) and 14 Cal. Code of Regs. § 15126.4(a)(4) and, to this end, the study shall recognize that impacts to Caltrans facilities that are not attributable to development located within the City of Long Beach are not required to pay in excess of such developments' fair share obligations. The fee study shall also be compliant with Government Code § 66001(g) and any other applicable provisions of law. If Caltrans chooses to accept the project Applicant's fair share payment, Caltrans shall apply the payment to the fee program adopted by Caltrans or agreed upon by the City and Caltrans as a result of the fair share fee study.

After implementing Mitigation Measure T-1, some of the potentially significant traffic impacts to intersections in Long Beach, intersections in neighboring cities, Caltrans intersections, and freeway facilities may be reduced while others are likely to remain significant and unavoidable.

CONCLUSION

This TIA identified traffic impacts resulting from changes to land uses arising from the City of Long Beach (City) adopting the proposed Land Use and Urban Design Elements of the General Plan. The

Land Use and Urban Design Elements do not propose and cannot mandate construction of any new structures within Long Beach. Rather, the Land Use and Urban Design Elements are plans to strategically accommodate forecasted growth in population, housing, and employment. Through processes established by the State, the United States Department of Housing and Urban Development, and SCAG, the City is compelled to plan for the accommodation of:

- **Population:** 18,230 new residents, for a total of 484,485 by 2040
- **Housing:** 28,524 new dwelling units, for a total of 192,318 by 2040
- **Employment:** 28,511 new jobs anticipated, for a total of 181,665 by 2040

In a departure from the existing Land Use Element, which segregates property with traditional single-use land use designations, the proposed Land Use Element establishes 14 PlaceTypes that would allow for a combination of land uses at varying densities and intensities to allow for greater flexibility and a mix of compatible land uses. Under the proposed Land Use Element, approximately 13 percent of the city is proposed to result in concentrated land use changes as compared to existing conditions. These areas are referred to "Major Areas of Change" throughout the proposed Land Use Element. These areas of concentrated land use changes were identified because they are supported by alternative transportation options consistent with the Mobility Element. Concentrating the increased land use density along the corridors with existing and planned infrastructure to support alternative modes of travel can result in reduced automobile trips generated from these land uses.

The TIA sampled 120 intersections in Long Beach and adjacent cities including 30 intersections under Caltrans jurisdiction. The traffic volume increase between Existing (2018) and General Plan Anticipated Buildout (2040) With the Proposed Project is considered significant at 48 of the 120 intersections included in the study area (40 percent). It should be noted that compared to General Plan Horizon Year (2040) No Project, the TIA shows improvement at 4 intersections and degradation at 9 intersections with the proposed Land Use Element. Potentially significant traffic impacts were also identified at freeway facilities. Physical improvements that would retain the performance goal of LOS D were identified but constraints to implementing the physical improvements render them infeasible.

The proposed Land Use and Urban Design Elements plan for growth near infrastructure for alternative modes of transportation. The Mobility Element includes Implementation Measures designed to promote mobility by supporting all travel modes, including walking, bicycling, and use of transit, thereby reducing the number of automobile trips on the roadway network. The analysis of VMT with the proposed Land Use Element shows a reduction in VMT per capita from 19.9 in existing conditions to 18.2 with the project. The VMT analysis further showed a reduction in peak hour VMT per capita with the proposed Land Use Element compared to the old Land Use Element. Although off-peak VMT increases compared to the old Land Use Element due to the increase in number of households, the VMT per household decreases with the proposed Land Use Element. The State of California has concurrent goals of reducing VMT and increasing housing supply to improve affordability and accommodate the workforce. The City believes that the proposed General Plan strikes the appropriate balance between the State's concurrent goals of reducing VMT and increasing housing supply.

While reducing vehicle travel demand may reduce the level of traffic impacts identified in this TIA, the effects cannot be quantified and the City's mobility planning cannot be considered mitigation for the impacted freeway facilities and 48 impacted intersections for the purposes of CEQA. Therefore, Mitigation Measure T-1, as outlined above, is recommended to reduce the level of traffic impacts.

After implementing Mitigation Measure T-1, some of the potentially significant traffic impacts to intersections in Long Beach, intersections in neighboring cities, Caltrans intersections, and freeway facilities may be reduced while others are likely to remain significant and unavoidable.

REFERENCES

California Department of Transportation (Caltrans). Caltrans Guide for Preparation of Traffic Impact Studies 2002. December.

City of Long Beach, October 2013. Mobility Element.

City of Long Beach Department of Public Works. 2018. *Traffic Impact Analysis (TIA) Guidelines.*

Los Angeles County Metropolitan Transportation Authority (Metro). 2010. *2010 Congestion Management Program*.

Transportation Research Board of the National Academies (TRB). 2016. *Highway Capacity Manual, 6th Edition: A Guide for Multimodal Mobility Analysis*.

APPENDIX A

TRAFFIC VOLUME DATA

This page intentionally left blank

National Data & Surveying Services

Intersection Turning Movement Count

Location: Avalon Blvd & Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 18-05307-099
Date: 5/23/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Pacific Coast Hwy				Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	35	61	21	0	30	58	26	0	30	144	15	0	11	247	30	0	708
7:15 AM	38	87	29	0	29	44	32	0	42	173	26	0	14	345	36	0	895
7:30 AM	53	121	33	0	63	94	43	0	31	209	22	0	9	290	36	0	1004
7:45 AM	56	148	47	0	95	167	46	0	43	249	27	0	23	250	31	0	1182
8:00 AM	55	105	51	0	75	174	42	0	26	216	30	0	19	283	28	0	1104
8:15 AM	34	69	22	0	45	86	28	0	21	208	30	0	18	259	30	0	850
8:30 AM	44	62	21	0	38	78	15	0	18	164	29	0	13	192	34	0	708
8:45 AM	46	70	21	0	39	73	16	0	16	154	22	0	15	221	33	0	726
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	361	723	245	0	414	774	248	0	227	1517	201	0	122	2087	258	0	7177
APPROACH %'s :	27.16%	54.40%	18.43%	0.00%	28.83%	53.90%	17.27%	0.00%	11.67%	77.99%	10.33%	0.00%	4.95%	84.60%	10.46%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	202	461	160	0	262	479	163	0	142	847	105	0	65	1168	131	0	4185
PEAK HR FACTOR :	0.902	0.779	0.784	0.000	0.689	0.688	0.886	0.000	0.826	0.850	0.875	0.000	0.707	0.846	0.910	0.000	0.885
	0.820				0.734				0.857				0.863				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	51	103	29	0	79	137	32	0	24	278	40	0	23	230	35	0	1061
4:15 PM	54	106	29	0	66	128	31	0	29	291	40	0	17	243	33	0	1067
4:30 PM	54	120	34	0	63	146	34	0	28	281	45	0	27	265	37	0	1134
4:45 PM	65	113	38	0	52	156	36	0	24	262	34	0	21	248	41	0	1090
5:00 PM	61	140	35	0	74	121	39	0	15	298	38	0	29	254	42	0	1146
5:15 PM	48	107	33	0	67	114	36	0	26	303	36	0	26	292	51	0	1139
5:30 PM	60	126	22	0	80	133	47	0	21	266	35	0	23	253	31	0	1097
5:45 PM	54	99	22	0	55	98	34	0	21	279	30	0	28	261	33	0	1014
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	447	914	242	0	536	1033	289	0	188	2258	298	0	194	2046	303	0	8748
APPROACH %'s :	27.89%	57.02%	15.10%	0.00%	28.85%	55.60%	15.55%	0.00%	6.85%	82.29%	10.86%	0.00%	7.63%	80.46%	11.92%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	228	480	140	0	256	537	145	0	93	1144	153	0	103	1059	171	0	4509
PEAK HR FACTOR :	0.877	0.857	0.921	0.000	0.865	0.861	0.929	0.000	0.830	0.944	0.850	0.000	0.888	0.907	0.838	0.000	0.984
	0.898				0.961				0.952				0.903				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Avalon Blvd & Anaheim St
City: Long Beach
Control: Signalized

Project ID: 18-05307-100
Date: 5/23/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Anaheim St				Anaheim St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	53	6	0	11	44	18	0	18	77	9	0	14	134	9	0	405
7:15 AM	9	55	7	0	15	80	30	0	32	103	3	0	27	159	15	0	535
7:30 AM	11	73	6	0	15	82	24	0	50	105	6	0	40	157	14	0	583
7:45 AM	11	74	18	0	19	86	31	0	48	132	9	0	28	136	15	0	607
8:00 AM	16	55	11	0	20	77	34	0	32	102	11	0	17	114	10	0	499
8:15 AM	8	48	8	0	26	71	26	0	32	108	15	0	18	130	11	0	501
8:30 AM	10	43	6	0	14	61	26	0	29	93	10	0	13	95	10	0	410
8:45 AM	15	36	13	0	19	53	22	0	24	91	4	0	18	99	21	0	415
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	92	437	75	0	139	554	211	0	265	811	67	0	175	1024	105	0	3955
APPROACH %'s :	15.23%	72.35%	12.42%	0.00%	15.38%	61.28%	23.34%	0.00%	23.18%	70.95%	5.86%	0.00%	13.42%	78.53%	8.05%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	47	257	42	0	69	325	119	0	162	442	29	0	112	566	54	0	2224
PEAK HR FACTOR :	0.734	0.868	0.583	0.000	0.863	0.945	0.875	0.000	0.810	0.837	0.659	0.000	0.700	0.890	0.900	0.000	0.916
	0.840				0.943				0.837				0.867				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	16	76	19	0	33	109	41	0	44	141	9	0	29	123	20	0	660
4:15 PM	16	52	14	0	26	92	39	0	36	146	13	0	30	115	24	0	603
4:30 PM	24	85	13	0	26	73	28	0	37	133	10	0	22	164	32	0	647
4:45 PM	23	101	21	0	34	88	34	0	41	132	11	0	29	139	11	0	664
5:00 PM	24	94	35	0	9	70	34	0	39	143	10	0	31	137	26	0	652
5:15 PM	23	67	17	0	28	64	33	0	34	150	7	0	28	177	36	0	664
5:30 PM	15	81	14	0	24	71	40	0	35	127	7	0	24	159	28	0	625
5:45 PM	16	70	11	0	11	77	37	0	47	134	11	0	24	140	22	0	600
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	157	626	144	0	191	644	286	0	313	1106	78	0	217	1154	199	0	5115
APPROACH %'s :	16.94%	67.53%	15.53%	0.00%	17.04%	57.45%	25.51%	0.00%	20.91%	73.88%	5.21%	0.00%	13.82%	73.50%	12.68%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	94	347	86	0	97	295	129	0	151	558	38	0	110	617	105	0	2627
PEAK HR FACTOR :	0.979	0.859	0.614	0.000	0.713	0.838	0.949	0.000	0.921	0.930	0.864	0.000	0.887	0.871	0.729	0.000	0.989
	0.861				0.835				0.973				0.863				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Wilmington Ave & Sepulveda Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-090
Date: 5/23/2018

Total

NS/EW Streets:	Wilmington Ave				Wilmington Ave				Sepulveda Blvd				Sepulveda Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	98	25	1	27	91	49	0	29	84	9	0	25	118	24	0	585
7:15 AM	3	99	24	0	22	123	46	0	33	92	7	1	39	139	14	0	642
7:30 AM	7	122	49	0	25	101	48	0	54	106	14	0	37	153	25	0	741
7:45 AM	4	151	56	0	28	97	53	0	54	104	12	0	23	134	35	1	752
8:00 AM	4	105	33	0	26	114	55	1	45	75	10	0	38	127	30	0	663
8:15 AM	5	108	42	0	32	95	42	1	46	93	11	0	27	116	30	0	648
8:30 AM	3	116	29	0	23	75	48	0	30	66	3	0	14	89	27	0	523
8:45 AM	7	69	21	0	19	80	46	0	24	90	10	1	14	113	35	1	530
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	38	868	279	1	202	776	387	2	315	710	76	2	217	989	220	2	5084
APPROACH %'s :	3.20%	73.19%	23.52%	0.08%	14.78%	56.77%	28.31%	0.15%	28.56%	64.37%	6.89%	0.18%	15.20%	69.26%	15.41%	0.14%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	20	486	180	0	111	407	198	2	199	378	47	0	125	530	120	1	2804
PEAK HR FACTOR :	0.714	0.805	0.804	0.000	0.867	0.893	0.900	0.500	0.921	0.892	0.839	0.000	0.822	0.866	0.857	0.250	0.932
	0.813				0.916				0.897				0.902				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	8	101	78	0	29	116	54	0	25	145	5	0	22	95	36	0	714
4:15 PM	3	120	70	0	29	110	45	0	29	154	6	0	18	96	40	0	720
4:30 PM	6	112	72	0	41	114	81	0	42	149	10	0	36	123	26	0	812
4:45 PM	7	113	55	0	30	137	75	0	41	158	11	0	25	121	31	0	804
5:00 PM	8	84	79	0	28	161	73	0	36	164	15	0	26	105	17	0	796
5:15 PM	8	70	50	0	32	135	77	0	33	171	7	0	20	125	24	0	752
5:30 PM	4	90	65	0	22	124	56	0	29	178	11	0	32	108	21	0	740
5:45 PM	5	99	36	1	30	121	69	0	36	172	5	0	24	96	16	0	710
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	49	789	505	1	241	1018	530	0	271	1291	70	0	203	869	211	0	6048
APPROACH %'s :	3.65%	58.71%	37.57%	0.07%	13.47%	56.90%	29.63%	0.00%	16.61%	79.11%	4.29%	0.00%	15.82%	67.73%	16.45%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	29	379	256	0	131	547	306	0	152	642	43	0	107	474	98	0	3164
PEAK HR FACTOR :	0.906	0.838	0.810	0.000	0.799	0.849	0.944	0.000	0.905	0.939	0.717	0.000	0.743	0.948	0.790	0.000	0.974
	0.874				0.939				0.973				0.918				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Wilmington Ave & 223rd St
City: Long Beach
Control: Signalized

Project ID: 18-05307-089
Date: 5/23/2018

Total

NS/EW Streets:	Wilmington Ave				Wilmington Ave				223rd St				223rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	120	28	0	18	227	103	5	79	75	0	0	26	85	4	0	770
7:15 AM	1	129	23	0	13	207	112	3	91	72	4	0	26	117	15	0	813
7:30 AM	2	155	34	0	21	232	107	2	89	113	4	0	32	140	19	0	950
7:45 AM	2	186	44	0	13	245	87	6	90	108	3	0	46	91	15	0	936
8:00 AM	1	134	36	1	15	215	87	2	93	106	4	0	51	118	11	0	874
8:15 AM	3	163	25	2	16	227	68	6	70	85	1	0	25	95	11	0	797
8:30 AM	6	150	31	1	13	173	76	5	82	92	2	0	28	93	5	0	757
8:45 AM	0	125	23	1	16	175	84	2	51	71	3	0	25	87	15	0	678
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	15	1162	244	5	125	1701	724	31	645	722	21	0	259	826	95	0	6575
APPROACH %'s :	1.05%	81.49%	17.11%	0.35%	4.84%	65.90%	28.05%	1.20%	46.47%	52.02%	1.51%	0.00%	21.95%	70.00%	8.05%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	6	604	137	1	62	899	393	13	363	399	15	0	155	466	60	0	3573
PEAK HR FACTOR :	0.750	0.812	0.778	0.250	0.738	0.917	0.877	0.542	0.976	0.883	0.938	0.000	0.760	0.832	0.789	0.000	0.940
	0.806				0.944				0.943				0.891				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	187	47	1	14	152	61	2	148	198	5	0	23	45	25	0	912
4:15 PM	1	176	30	0	21	168	89	2	132	220	3	0	21	71	31	0	965
4:30 PM	1	144	38	0	28	174	95	5	163	204	3	0	37	75	45	0	1012
4:45 PM	2	158	46	0	13	193	102	2	115	190	2	0	42	88	58	0	1011
5:00 PM	1	160	43	0	22	215	90	5	147	252	8	0	25	73	36	0	1077
5:15 PM	1	161	53	0	15	230	127	5	109	222	6	0	24	60	25	0	1038
5:30 PM	2	163	59	0	22	165	92	3	118	259	2	1	23	79	15	0	1003
5:45 PM	2	147	63	0	20	201	150	4	106	214	3	0	25	51	12	0	998
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	1296	379	1	155	1498	806	28	1038	1759	32	1	220	542	247	0	8016
APPROACH %'s :	0.83%	76.69%	22.43%	0.06%	6.23%	60.23%	32.41%	1.13%	36.68%	62.16%	1.13%	0.04%	21.80%	53.72%	24.48%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	5	623	180	0	78	812	414	17	534	868	19	0	128	296	164	0	4138
PEAK HR FACTOR :	0.625	0.967	0.849	0.000	0.696	0.883	0.815	0.850	0.819	0.861	0.594	0.000	0.762	0.841	0.707	0.000	0.961
	0.940				0.876				0.873				0.782				

National Data & Surveying Services Intersection Turning Movement Count

Location: Terminal Island Fwy & Willow St
City: Long Beach
Control: Signalized

Project ID: 18-05307-036
Date: 5/23/2018

Total

NS/EW Streets:	Terminal Island Fwy				Terminal Island Fwy				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	2	0	0	1	0	0	1	3	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	61	0	26	0	0	0	0	0	0	67	44	0	45	168	1	0	412
7:15 AM	38	0	36	0	0	0	0	0	0	82	62	0	40	179	0	0	437
7:30 AM	51	0	47	0	0	0	1	0	0	114	52	0	54	170	1	0	490
7:45 AM	64	0	43	0	0	0	0	0	0	118	52	0	58	171	0	0	506
8:00 AM	70	0	38	1	0	0	0	0	0	106	59	0	37	149	1	0	461
8:15 AM	75	0	36	0	0	0	0	0	1	109	82	0	41	149	0	0	493
8:30 AM	77	0	48	0	0	1	0	0	0	85	67	0	35	108	0	0	421
8:45 AM	64	0	42	0	0	0	0	0	1	79	70	1	27	119	0	0	403
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	500	0	316	1	0	1	1	0	2	760	488	1	337	1213	3	0	3623
APPROACH %'s :	61.20%	0.00%	38.68%	0.12%	0.00%	50.00%	50.00%	0.00%	0.16%	60.75%	39.01%	0.08%	21.70%	78.11%	0.19%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	260	0	164	1	0	0	1	0	1	447	245	0	190	639	2	0	1950
PEAK HR FACTOR :	0.867	0.000	0.872	0.250	0.000	0.000	0.250	0.000	0.250	0.947	0.747	0.000	0.819	0.934	0.500	0.000	0.963
	0.957				0.250				0.902				0.907				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	2	0	0	1	0	0	1	3	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	106	0	93	0	0	0	1	0	0	219	63	0	35	105	0	0	622
4:15 PM	115	0	106	0	0	0	0	0	0	215	73	0	49	111	0	0	669
4:30 PM	104	0	103	0	2	0	0	0	0	255	56	0	51	95	0	0	666
4:45 PM	91	0	102	0	0	0	0	0	0	244	62	0	53	110	0	0	662
5:00 PM	58	0	117	0	0	0	0	0	0	245	76	1	35	85	0	0	617
5:15 PM	46	0	96	0	0	0	0	0	0	211	82	0	34	117	0	0	586
5:30 PM	31	0	66	0	0	0	0	0	0	241	71	0	33	82	3	0	527
5:45 PM	36	0	44	0	0	0	0	0	0	209	77	0	40	93	0	0	499
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	587	0	727	0	2	0	1	0	0	1839	560	1	330	798	3	0	4848
APPROACH %'s :	44.67%	0.00%	55.33%	0.00%	66.67%	0.00%	33.33%	0.00%	0.00%	76.63%	23.33%	0.04%	29.18%	70.56%	0.27%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	416	0	404	0	2	0	1	0	0	933	254	0	188	421	0	0	2619
PEAK HR FACTOR :	0.904	0.000	0.953	0.000	0.250	0.000	0.250	0.000	0.000	0.915	0.870	0.000	0.887	0.948	0.000	0.000	0.979
	0.928				0.375				0.954				0.934				

National Data & Surveying Services Intersection Turning Movement Count

Location: Santa Fe Ave & Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 18-05307-037
Date: 5/23/2018

Total

NS/EW Streets:	Santa Fe Ave				Santa Fe Ave				Wardlow Rd				Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	89	93	16	0	35	89	105	0	16	36	21	0	33	90	94	0	717
7:15 AM	124	100	24	0	25	81	99	0	15	42	51	0	34	114	114	0	823
7:30 AM	119	159	27	0	32	94	130	0	22	52	56	0	30	96	124	0	941
7:45 AM	100	149	49	0	55	94	93	0	32	35	38	0	50	95	184	0	974
8:00 AM	98	130	26	0	41	127	96	0	22	32	59	0	53	109	89	0	882
8:15 AM	112	131	47	0	50	92	90	0	28	49	44	0	37	84	109	0	873
8:30 AM	96	116	39	0	28	114	109	0	23	45	39	0	41	88	72	0	810
8:45 AM	107	78	41	0	38	96	81	0	20	36	63	0	36	74	66	0	736
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	845	956	269	0	304	787	803	0	178	327	371	0	314	750	852	0	6756
APPROACH %'s :	40.82%	46.18%	13.00%	0.00%	16.05%	41.55%	42.40%	0.00%	20.32%	37.33%	42.35%	0.00%	16.39%	39.14%	44.47%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	429	569	149	0	178	407	409	0	104	168	197	0	170	384	506	0	3670
PEAK HR FACTOR :	0.901	0.895	0.760	0.000	0.809	0.801	0.787	0.000	0.813	0.808	0.835	0.000	0.802	0.881	0.688	0.000	0.942
	0.940				0.941				0.902				0.805				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	80	93	41	0	100	160	168	0	14	111	56	0	40	45	45	0	953
4:15 PM	86	115	47	0	103	165	167	0	16	123	50	0	43	45	43	0	1003
4:30 PM	74	113	59	0	119	176	195	0	25	144	68	0	39	49	40	0	1101
4:45 PM	66	147	40	0	123	190	225	0	14	130	59	0	41	75	41	0	1151
5:00 PM	65	119	54	0	110	187	183	0	14	130	68	0	35	63	38	0	1066
5:15 PM	87	118	39	0	106	209	170	0	9	160	71	0	43	50	43	0	1105
5:30 PM	63	97	43	0	118	209	185	0	15	168	67	0	41	58	33	0	1097
5:45 PM	43	79	49	0	93	216	147	0	11	133	67	0	38	46	40	0	962
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	564	881	372	0	872	1512	1440	0	118	1099	506	0	320	431	323	0	8438
APPROACH %'s :	31.04%	48.49%	20.47%	0.00%	22.80%	39.54%	37.66%	0.00%	6.85%	63.78%	29.37%	0.00%	29.80%	40.13%	30.07%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	292	497	192	0	458	762	773	0	62	564	266	0	158	237	162	0	4423
PEAK HR FACTOR :	0.839	0.845	0.814	0.000	0.931	0.911	0.859	0.000	0.620	0.881	0.937	0.000	0.919	0.790	0.942	0.000	0.961
	0.969				0.926				0.929				0.887				

National Data & Surveying Services Intersection Turning Movement Count

Location: Santa Fe Ave & Willow St
City: Long Beach
Control: Signalized

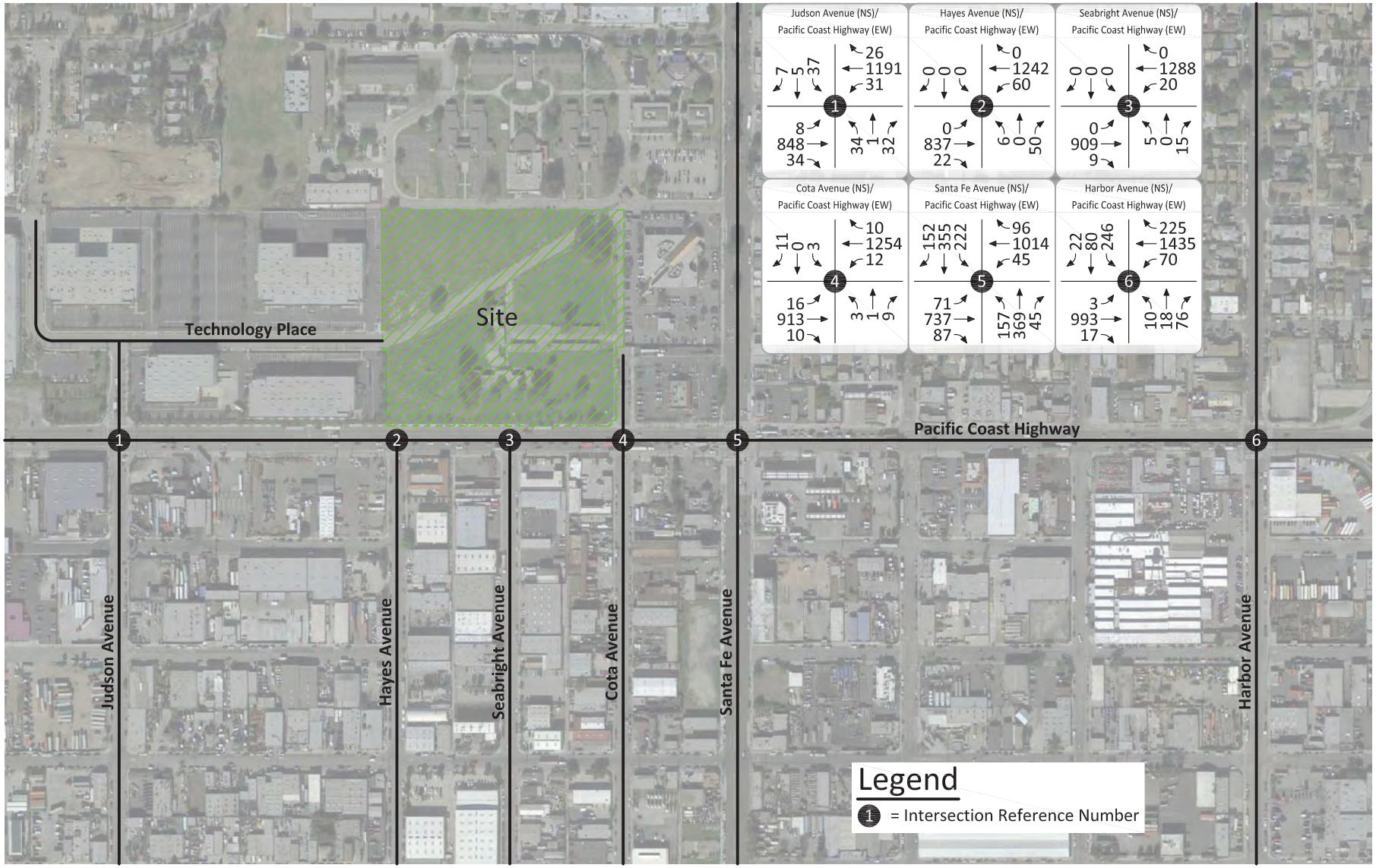
Project ID: 18-05307-035
Date: 5/23/2018

Total

NS/EW Streets:	Santa Fe Ave				Santa Fe Ave				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	19	35	24	0	28	75	28	0	18	115	8	0	40	187	37	0	614
7:15 AM	27	89	48	0	41	87	32	0	23	138	9	0	61	185	35	0	775
7:30 AM	20	125	55	0	77	176	48	0	32	160	10	0	87	195	55	0	1040
7:45 AM	31	176	52	0	78	148	35	0	37	161	17	0	75	196	61	0	1067
8:00 AM	25	142	48	0	72	98	34	1	30	141	13	0	45	167	55	0	871
8:15 AM	23	81	50	0	62	79	28	1	34	140	19	1	52	143	48	0	761
8:30 AM	22	73	56	0	56	79	30	1	26	149	8	0	45	130	46	0	721
8:45 AM	12	97	62	0	65	69	22	0	21	112	11	0	39	101	39	0	650
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	179	818	395	0	479	811	257	3	221	1116	95	1	444	1304	376	0	6499
APPROACH %'s :	12.86%	58.76%	28.38%	0.00%	30.90%	52.32%	16.58%	0.19%	15.42%	77.88%	6.63%	0.07%	20.90%	61.39%	17.70%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	103	532	203	0	268	509	149	1	122	600	49	0	268	743	206	0	3753
PEAK HR FACTOR :	0.831	0.756	0.923	0.000	0.859	0.723	0.776	0.250	0.824	0.932	0.721	0.000	0.770	0.948	0.844	0.000	0.879
	0.809				0.770				0.897				0.903				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	21	146	65	0	76	104	18	0	35	280	8	0	49	126	58	0	986
4:15 PM	16	118	61	0	98	121	30	0	40	257	12	0	46	149	58	0	1006
4:30 PM	19	137	62	0	83	101	25	0	44	311	6	0	42	130	55	0	1015
4:45 PM	17	140	56	0	87	80	28	0	41	274	8	0	42	126	57	0	956
5:00 PM	20	118	74	0	74	106	30	1	41	305	7	0	48	117	52	0	993
5:15 PM	19	100	50	0	88	103	21	0	39	251	9	0	40	141	53	0	914
5:30 PM	17	108	55	0	77	99	20	0	35	244	12	0	48	148	52	0	915
5:45 PM	19	71	41	0	67	95	21	0	23	213	24	1	61	115	48	0	799
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	148	938	464	0	650	809	193	1	298	2135	86	1	376	1052	433	0	7584
APPROACH %'s :	9.55%	60.52%	29.94%	0.00%	39.32%	48.94%	11.68%	0.06%	11.83%	84.72%	3.41%	0.04%	20.20%	56.53%	23.27%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	72	513	253	0	342	408	113	1	166	1147	33	0	178	522	222	0	3970
PEAK HR FACTOR :	0.900	0.916	0.855	0.000	0.872	0.843	0.942	0.250	0.943	0.922	0.688	0.000	0.927	0.876	0.957	0.000	0.978
	0.961				0.867				0.932				0.911				

Figure 5
Existing Morning Peak Hour Intersection Turning Movement Volumes

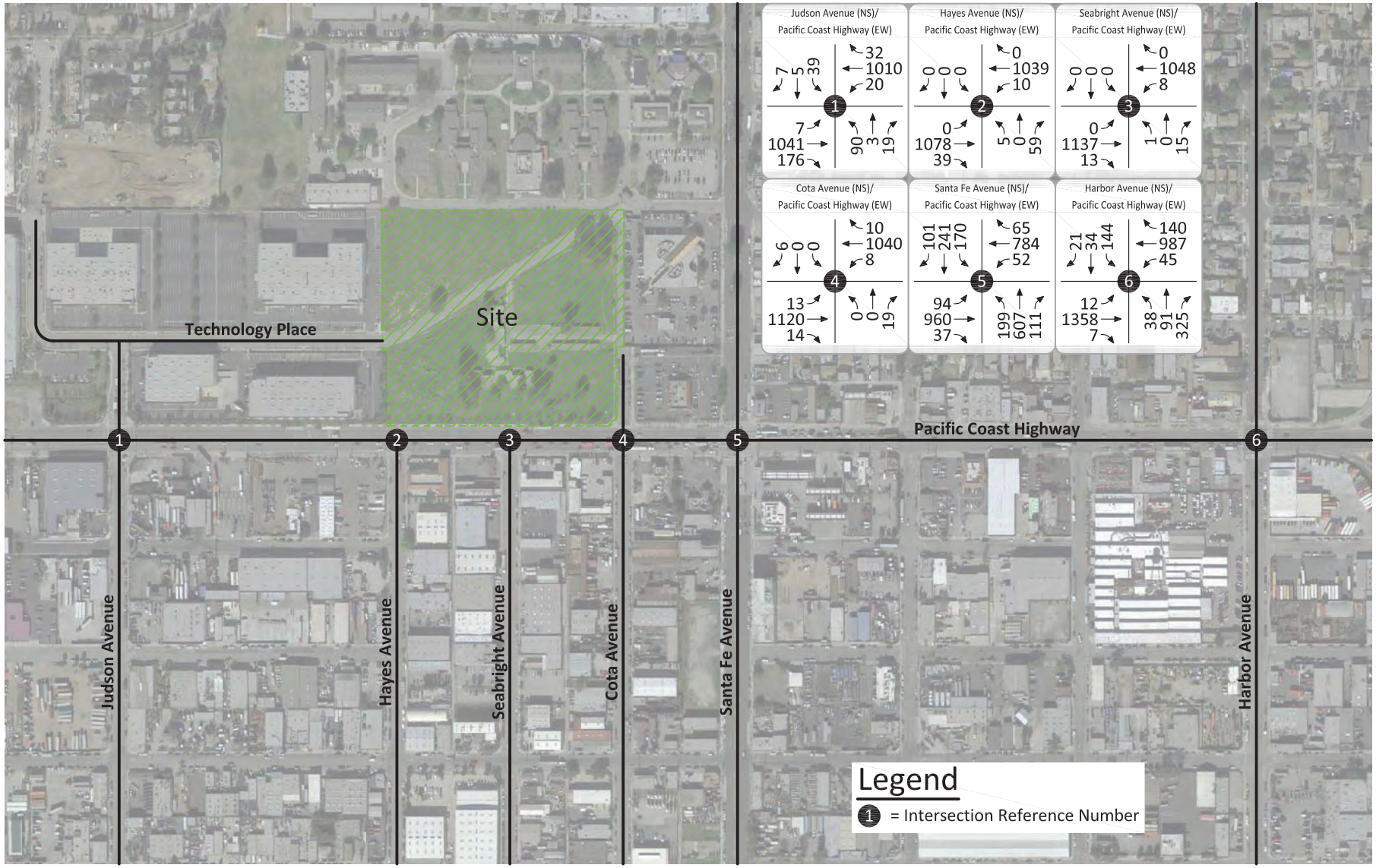


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6689b

Figure 6
Existing Evening Peak Hour Intersection Turning Movement Volumes



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6689b

National Data & Surveying Services Intersection Turning Movement Count

Location: Santa Fe Ave & Anaheim St
City: Long Beach
Control: Signalized

Project ID: 18-05307-033
Date: 5/23/2018

Total

NS/EW Streets:	Santa Fe Ave				Santa Fe Ave				Anaheim St				Anaheim St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	24	5	0	19	27	26	0	21	161	2	0	0	206	48	0	544
7:15 AM	4	45	6	0	24	27	15	0	17	173	2	0	2	194	59	0	568
7:30 AM	6	72	4	0	48	33	32	0	12	177	2	0	3	206	92	0	687
7:45 AM	5	74	6	0	46	48	31	0	23	128	3	0	1	197	74	0	636
8:00 AM	6	50	2	0	30	34	30	0	14	136	0	0	2	207	58	0	569
8:15 AM	8	35	3	0	37	26	23	0	11	122	4	0	3	200	48	0	520
8:30 AM	3	38	5	0	30	29	15	0	18	140	1	0	8	176	32	0	495
8:45 AM	7	36	4	0	36	32	24	0	8	172	0	0	3	165	43	0	530
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	44	374	35	0	270	256	196	0	124	1209	14	0	22	1551	454	0	4549
APPROACH %'s :	9.71%	82.56%	7.73%	0.00%	37.40%	35.46%	27.15%	0.00%	9.21%	89.76%	1.04%	0.00%	1.09%	76.52%	22.40%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	21	241	18	0	148	142	108	0	66	614	7	0	8	804	283	0	2460
PEAK HR FACTOR :	0.875	0.814	0.750	0.000	0.771	0.740	0.844	0.000	0.717	0.867	0.583	0.000	0.667	0.971	0.769	0.000	0.895
	0.824				0.796				0.895				0.909				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	61	11	0	61	39	26	0	27	215	3	0	3	189	32	0	673
4:15 PM	8	50	8	0	45	63	26	0	27	266	3	0	7	209	63	0	775
4:30 PM	8	91	24	0	41	40	37	0	36	283	8	0	3	181	45	0	797
4:45 PM	9	96	13	0	43	53	26	0	34	253	6	0	2	166	40	0	741
5:00 PM	6	84	12	0	39	42	19	0	25	278	4	0	0	115	44	0	668
5:15 PM	9	56	8	0	42	38	26	0	20	242	2	0	4	125	37	0	609
5:30 PM	3	33	9	0	36	49	31	0	17	204	5	0	2	98	42	0	529
5:45 PM	3	29	7	0	40	34	18	0	29	217	5	0	3	129	45	0	559
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	52	500	92	0	347	358	209	0	215	1958	36	0	24	1212	348	0	5351
APPROACH %'s :	8.07%	77.64%	14.29%	0.00%	37.96%	39.17%	22.87%	0.00%	9.73%	88.64%	1.63%	0.00%	1.52%	76.52%	21.97%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	31	298	56	0	190	195	115	0	124	1017	20	0	15	745	180	0	2986
PEAK HR FACTOR :	0.861	0.776	0.583	0.000	0.779	0.774	0.777	0.000	0.861	0.898	0.625	0.000	0.536	0.891	0.714	0.000	0.937
	0.783				0.933				0.888				0.842				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-710 NB Ramps & SR-1/Pacific Coast Hwy
City: Long Beach
Control: 1-Way Stop (NB)

Project ID: 18-05723-010
Date: 11/1/2018

Total

NS/EW Streets:	I-710 NB Ramps				I-710 NB Ramps				SR-1/Pacific Coast Hwy				SR-1/Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2.5	0.5	0	0	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	8	0	0	0	42	0	0	182	97	0	0	225	130	0	684
7:15 AM	0	0	15	0	0	0	32	0	0	200	106	0	0	300	119	0	772
7:30 AM	0	0	10	0	0	0	27	0	0	240	113	0	0	304	140	0	834
7:45 AM	0	0	62	0	0	0	27	0	0	268	94	0	0	295	117	0	863
8:00 AM	0	0	39	0	0	0	8	0	0	248	107	0	0	237	133	0	772
8:15 AM	0	0	37	0	0	0	22	0	0	233	95	0	0	263	132	0	782
8:30 AM	0	0	29	0	0	0	30	0	0	204	90	0	0	222	100	0	675
8:45 AM	0	0	17	0	0	0	35	0	0	185	120	0	0	230	90	0	677
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	217	0	0	0	223	0	0	1760	822	0	0	2076	961	0	6059
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	68.16%	31.84%	0.00%	0.00%	68.36%	31.64%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	148	0	0	0	84	0	0	989	409	0	0	1099	522	0	3251
PEAK HR FACTOR :	0.000	0.000	0.597	0.000	0.000	0.000	0.778	0.000	0.000	0.923	0.905	0.000	0.000	0.904	0.932	0.000	0.942
	0.597				0.778				0.965				0.913				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2.5	0.5	0	0	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	27	0	0	0	24	0	0	345	163	0	0	171	48	0	778
4:15 PM	0	0	30	0	0	0	16	0	0	346	108	0	0	187	64	0	751
4:30 PM	0	0	33	0	0	0	16	0	0	379	143	0	0	194	86	0	851
4:45 PM	0	0	17	0	0	0	10	0	0	367	172	0	0	170	78	0	814
5:00 PM	0	0	36	0	0	0	5	0	0	422	142	0	0	186	79	0	870
5:15 PM	0	0	52	0	0	0	8	0	0	405	109	0	0	182	78	0	834
5:30 PM	0	0	50	0	0	0	29	0	0	395	137	0	0	189	66	0	866
5:45 PM	0	0	28	0	0	0	28	0	0	345	112	0	0	167	79	0	759
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	273	0	0	0	136	0	0	3004	1086	0	0	1446	578	0	6523
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	73.45%	26.55%	0.00%	0.00%	71.44%	28.56%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	155	0	0	0	52	0	0	1589	560	0	0	727	301	0	3384
PEAK HR FACTOR :	0.000	0.000	0.745	0.000	0.000	0.000	0.448	0.000	0.000	0.941	0.814	0.000	0.000	0.962	0.953	0.000	0.972
	0.745				0.448				0.953				0.970				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-710 SB Ramps & SR-1/Pacific Coast Hwy
City: Long Beach
Control: No Control

Project ID: 18-05723-009
Date: 11/1/2018

Total

NS/EW Streets:	I-710 SB Ramps				I-710 SB Ramps				SR-1/Pacific Coast Hwy				SR-1/Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	1.5	0.5	0	0	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	83	0	0	0	145	0	0	202	45	0	0	234	30	0	739
7:15 AM	0	0	88	0	0	0	120	0	0	209	46	0	0	279	37	0	779
7:30 AM	0	0	80	0	0	0	121	0	0	269	51	0	0	312	30	0	863
7:45 AM	0	0	82	0	0	0	109	0	0	275	48	0	0	271	37	0	822
8:00 AM	0	0	65	0	0	0	91	0	0	281	53	0	0	225	30	0	745
8:15 AM	0	0	88	0	0	0	111	0	0	247	45	0	0	237	38	0	766
8:30 AM	0	0	67	0	0	0	112	0	0	225	27	0	0	232	28	0	691
8:45 AM	0	0	69	0	0	0	125	0	0	233	40	0	0	230	33	0	730
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	622	0	0	0	934	0	0	1941	355	0	0	2020	263	0	6135
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	84.54%	15.46%	0.00%	0.00%	88.48%	11.52%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	315	0	0	0	441	0	0	1034	198	0	0	1087	134	0	3209
PEAK HR FACTOR :	0.000	0.000	0.895	0.000	0.000	0.000	0.911	0.000	0.000	0.920	0.934	0.000	0.000	0.871	0.905	0.000	0.930
	0.895				0.911				0.922				0.893				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	1.5	0.5	0	0	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	109	0	0	0	119	0	0	392	28	0	0	176	16	0	840
4:15 PM	0	0	89	0	0	0	124	0	0	365	28	0	0	193	6	0	805
4:30 PM	0	0	89	0	0	0	118	0	0	428	30	0	0	197	12	0	874
4:45 PM	0	0	110	0	0	0	83	0	0	425	25	0	0	159	21	0	823
5:00 PM	0	0	114	0	0	0	114	0	0	450	44	0	0	193	10	0	925
5:15 PM	0	0	96	0	0	0	122	0	0	423	47	0	0	162	19	0	869
5:30 PM	0	0	91	0	0	0	112	0	0	430	64	0	0	203	17	0	917
5:45 PM	0	0	103	0	0	0	97	0	0	359	54	0	0	182	16	0	811
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	801	0	0	0	889	0	0	3272	320	0	0	1465	117	0	6864
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	91.09%	8.91%	0.00%	0.00%	92.60%	7.40%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	411	0	0	0	431	0	0	1728	180	0	0	717	67	0	3534
PEAK HR FACTOR :	0.000	0.000	0.901	0.000	0.000	0.000	0.883	0.000	0.000	0.960	0.703	0.000	0.000	0.883	0.798	0.000	0.955
	0.901				0.883				0.966				0.891				

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

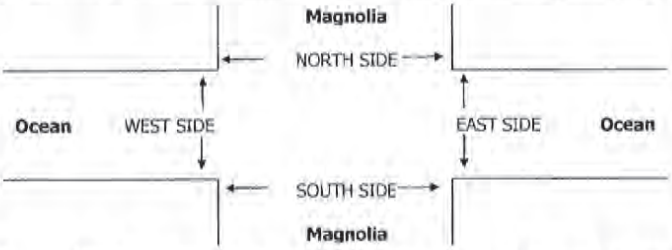
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Wed, May 25, 16	NORTH & SOUTH:	Magnolia	LOCATION #:	12
	EAST & WEST:	Ocean	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Magnolia			SOUTHBOUND Magnolia			EASTBOUND Ocean			WESTBOUND Ocean				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL	NB 0	SB X	EB X	WB X	TTL
AM	7:00 AM	2	4	1	26	15	51	5	70	2	15	421	14	626	1	0	0	0	1
	7:15 AM	4	2	2	32	36	79	23	117	2	25	427	19	768	1	0	0	0	1
	7:30 AM	5	5	4	32	35	96	23	103	2	12	474	27	818	0	0	0	0	0
	7:45 AM	3	6	9	34	29	65	28	124	8	19	457	27	809	0	0	0	0	0
	8:00 AM	5	7	5	42	41	77	30	130	8	23	397	39	804	0	0	0	0	0
	8:15 AM	6	4	2	43	28	61	30	132	5	29	401	30	771	1	0	0	2	3
	8:30 AM	4	4	0	52	20	52	25	147	6	24	397	31	762	1	0	0	0	1
	8:45 AM	1	5	2	53	25	75	24	120	5	16	298	40	664	0	0	0	0	0
	VOLUMES	30	37	25	314	229	556	188	943	38	163	3,272	227	6,022	4	0	0	2	6
	APPROACH %	33%	40%	27%	29%	21%	51%	16%	81%	3%	4%	89%	6%						
	APP/DEPART	92	/	452	1,099	/	432	1,169	/	1,284	3,662	/	3,854	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	19	22	20	151	133	299	111	489	23	83	1,729	123	3,202					
	APPROACH %	31%	36%	33%	26%	23%	51%	18%	78%	4%	4%	89%	6%						
	PEAK HR FACTOR		0.847			0.894			0.927			0.943		0.979					
	APP/DEPART	61	/	256	583	/	238	623	/	662	1,935	/	2,046	0					
PM	4:00 PM	12	13	5	55	14	52	23	296	4	13	219	24	730	1	0	0	0	1
	4:15 PM	9	8	14	63	22	78	21	283	4	13	232	21	768	0	0	0	0	0
	4:30 PM	15	34	9	68	32	91	29	334	6	11	277	25	931	0	0	0	0	0
	4:45 PM	15	18	14	48	17	71	41	347	4	16	252	16	859	0	0	0	0	0
	5:00 PM	27	17	6	56	21	71	34	339	8	10	301	21	911	0	0	0	0	0
	5:15 PM	12	9	6	46	19	50	44	333	4	12	265	13	813	0	0	0	1	1
	5:30 PM	11	8	11	42	11	62	34	303	6	12	261	18	779	0	0	1	0	1
	5:45 PM	4	6	5	50	12	45	37	282	9	10	195	12	667	0	0	0	1	1
	VOLUMES	105	113	70	428	148	520	263	2,517	45	97	2,002	150	6,458	1	0	1	2	4
	APPROACH %	36%	39%	24%	39%	14%	47%	9%	89%	2%	4%	89%	7%						
	APP/DEPART	288	/	525	1,096	/	289	2,825	/	3,017	2,249	/	2,627	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	69	78	35	218	89	283	148	1,353	22	49	1,095	75	3,514					
	APPROACH %	38%	43%	19%	37%	15%	48%	10%	89%	1%	4%	90%	6%						
	PEAK HR FACTOR		0.784			0.772			0.971			0.918		0.944					
	APP/DEPART	182	/	301	590	/	159	1,523	/	1,607	1,219	/	1,447	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

National Data & Surveying Services Intersection Turning Movement Count

Location: Pacific Ave & Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 18-05307-032
Date: 5/23/2018

Total

NS/EW Streets:	Pacific Ave				Pacific Ave				Pacific Coast Hwy				Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	18	61	16	0	14	56	18	0	19	131	11	0	14	228	16	0	602
7:15 AM	15	87	13	0	22	88	25	0	21	159	15	0	8	273	26	0	752
7:30 AM	17	85	14	0	20	92	25	1	20	197	7	0	10	294	30	0	812
7:45 AM	15	108	16	0	15	137	24	0	21	206	17	0	20	333	25	0	937
8:00 AM	26	88	11	0	26	88	24	0	26	178	14	0	17	304	30	0	832
8:15 AM	21	91	18	0	15	107	27	0	22	188	17	0	21	254	26	0	807
8:30 AM	17	79	18	0	25	92	19	0	25	192	14	0	20	234	33	0	768
8:45 AM	17	93	15	0	16	122	21	0	20	202	11	0	19	224	30	0	790
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	146	692	121	0	153	782	183	1	174	1453	106	0	129	2144	216	0	6300
APPROACH %'s :	15.22%	72.16%	12.62%	0.00%	13.67%	69.88%	16.35%	0.09%	10.04%	83.84%	6.12%	0.00%	5.18%	86.14%	8.68%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	79	372	59	0	76	424	100	1	89	769	55	0	68	1185	111	0	3388
PEAK HR FACTOR :	0.760	0.861	0.819	0.000	0.731	0.774	0.926	0.250	0.856	0.933	0.809	0.000	0.810	0.890	0.925	0.000	0.904
	0.917				0.854				0.935				0.902				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	134	28	0	22	91	18	1	37	306	16	0	24	189	33	0	918
4:15 PM	20	122	38	0	22	107	29	1	18	256	17	0	24	183	25	0	862
4:30 PM	25	136	26	0	19	82	18	0	31	351	22	0	18	193	32	0	953
4:45 PM	25	157	29	0	30	101	17	0	23	336	29	0	23	159	26	0	955
5:00 PM	23	118	26	0	21	102	19	1	28	425	23	0	21	212	25	0	1044
5:15 PM	20	169	29	0	27	109	20	0	17	346	23	0	16	201	19	0	996
5:30 PM	18	90	33	0	21	101	14	0	30	338	22	0	14	204	22	0	907
5:45 PM	20	117	23	0	23	102	19	0	20	274	16	0	22	171	22	0	829
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	170	1043	232	0	185	795	154	3	204	2632	168	0	162	1512	204	0	7464
APPROACH %'s :	11.76%	72.18%	16.06%	0.00%	16.27%	69.92%	13.54%	0.26%	6.79%	87.62%	5.59%	0.00%	8.63%	80.51%	10.86%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	93	580	110	0	97	394	74	1	99	1458	97	0	78	765	102	0	3948
PEAK HR FACTOR :	0.930	0.858	0.948	0.000	0.808	0.904	0.925	0.250	0.798	0.858	0.836	0.000	0.848	0.902	0.797	0.000	0.945
	0.898				0.907				0.869				0.916				

National Data & Surveying Services Intersection Turning Movement Count

Location: Pacific Ave & Anaheim St
City: Long Beach
Control: Signalized

Project ID: 18-05307-031
Date: 5/23/2018

Total

NS/EW Streets:	Pacific Ave				Pacific Ave				Anaheim St				Anaheim St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	18	39	8	0	15	56	12	0	15	134	8	0	5	233	11	1	555
7:15 AM	15	66	8	0	18	60	10	0	10	159	10	0	18	245	16	0	635
7:30 AM	14	63	12	0	23	74	9	0	7	155	10	0	20	265	16	0	668
7:45 AM	24	64	9	0	26	107	10	0	9	191	16	0	20	305	21	0	802
8:00 AM	24	72	14	0	22	71	19	0	10	175	16	0	15	258	20	0	716
8:15 AM	19	69	8	0	21	91	22	0	18	180	15	0	22	199	27	0	691
8:30 AM	26	97	15	0	19	66	12	0	20	180	10	0	14	185	32	0	676
8:45 AM	22	80	15	0	29	82	13	0	10	176	22	0	19	193	25	0	686
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	162	550	89	0	173	607	107	0	99	1350	107	0	133	1883	168	1	5429
APPROACH %'s :	20.22%	68.66%	11.11%	0.00%	19.50%	68.43%	12.06%	0.00%	6.36%	86.76%	6.88%	0.00%	6.09%	86.18%	7.69%	0.05%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	93	302	46	0	88	335	63	0	57	726	57	0	71	947	100	0	2885
PEAK HR FACTOR :	0.894	0.778	0.767	0.000	0.846	0.783	0.716	0.000	0.713	0.950	0.891	0.000	0.807	0.776	0.781	0.000	0.899
	0.799				0.850				0.972				0.808				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	21	97	21	0	15	85	10	0	32	311	21	0	17	193	17	0	840
4:15 PM	21	111	16	0	16	101	17	0	29	322	22	0	9	192	29	0	885
4:30 PM	19	122	19	0	20	75	12	0	39	325	15	0	7	174	21	0	848
4:45 PM	12	99	21	0	24	64	8	0	22	246	16	0	9	180	22	0	723
5:00 PM	23	148	24	0	24	81	18	0	12	292	13	0	10	182	27	0	854
5:15 PM	19	124	17	0	24	92	15	0	20	335	10	0	16	170	19	0	861
5:30 PM	18	102	16	0	15	87	8	0	21	254	12	0	18	169	17	0	737
5:45 PM	13	86	7	0	17	76	16	0	13	285	17	0	15	160	15	0	720
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	146	889	141	0	155	661	104	0	188	2370	126	0	101	1420	167	0	6468
APPROACH %'s :	12.41%	75.60%	11.99%	0.00%	16.85%	71.85%	11.30%	0.00%	7.00%	88.30%	4.69%	0.00%	5.98%	84.12%	9.89%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	75	480	80	0	84	321	55	0	102	1185	66	0	35	728	99	0	3310
PEAK HR FACTOR :	0.815	0.811	0.833	0.000	0.875	0.795	0.764	0.000	0.654	0.912	0.750	0.000	0.875	0.948	0.853	0.000	0.935
	0.814				0.858				0.892				0.937				

National Data & Surveying Services Intersection Turning Movement Count

Location: Pacific Ave & 7th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-002
Date: 5/23/2018

Total

NS/EW Streets:	Pacific Ave				Pacific Ave				7th St				7th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	8	25	0	1	0	34	9	0	0	0	0	0	22	254	10	0	363
7:15 AM	13	35	0	0	0	56	15	0	0	0	0	0	31	279	11	0	440
7:30 AM	11	36	0	1	0	56	8	0	0	0	0	0	24	319	19	0	474
7:45 AM	5	35	0	1	0	107	10	0	0	0	0	0	20	304	15	0	497
8:00 AM	6	43	0	1	0	71	13	0	0	0	0	0	26	295	18	0	473
8:15 AM	20	59	0	0	0	80	21	0	0	0	0	0	26	238	17	0	461
8:30 AM	7	61	0	1	0	68	12	0	0	0	0	0	23	232	18	0	422
8:45 AM	7	51	0	0	0	68	12	0	0	0	0	0	27	187	18	0	370
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	77	345	0	5	0	540	100	0	0	0	0	0	199	2108	126	0	3500
APPROACH %'s :	18.03%	80.80%	0.00%	1.17%	0.00%	84.38%	15.63%	0.00%					8.18%	86.64%	5.18%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	42	173	0	3	0	314	52	0	0	0	0	0	96	1156	69	0	1905
PEAK HR FACTOR :	0.525	0.733	0.000	0.750	0.000	0.734	0.619	0.000	0.000	0.000	0.000	0.000	0.923	0.906	0.908	0.000	0.958
	0.690				0.782								0.912				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	0	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	10	69	0	1	0	73	20	0	0	0	0	0	19	169	18	0	379
4:15 PM	13	98	0	3	0	65	10	0	0	0	0	0	15	117	24	0	345
4:30 PM	12	97	0	2	0	63	5	0	0	0	0	0	13	155	22	0	369
4:45 PM	9	107	0	1	0	52	11	0	0	0	0	0	21	149	13	0	363
5:00 PM	16	125	0	0	0	54	8	0	0	0	0	0	18	149	19	0	389
5:15 PM	18	122	0	2	0	60	9	0	0	0	0	0	15	152	21	0	399
5:30 PM	9	100	0	3	0	83	16	0	0	0	0	0	17	143	18	0	389
5:45 PM	13	83	0	3	0	59	9	0	0	0	0	0	18	145	14	0	344
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	100	801	0	15	0	509	88	0	0	0	0	0	136	1179	149	0	2977
APPROACH %'s :	10.92%	87.45%	0.00%	1.64%	0.00%	85.26%	14.74%	0.00%					9.29%	80.53%	10.18%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	52	454	0	6	0	249	44	0	0	0	0	0	71	593	71	0	1540
PEAK HR FACTOR :	0.722	0.908	0.000	0.500	0.000	0.750	0.688	0.000	0.000	0.000	0.000	0.000	0.845	0.975	0.845	0.000	0.965
	0.901				0.740								0.977				

National Data & Surveying Services Intersection Turning Movement Count

Location: Pacific Ave & 6th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-003
Date: 5/23/2018

Total

NS/EW Streets:	Pacific Ave				Pacific Ave				6th St				6th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	1	3	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	25	6	0	10	50	0	0	10	125	3	0	0	0	0	0	229
7:15 AM	0	37	7	0	20	65	0	1	10	171	6	0	0	0	0	0	317
7:30 AM	0	34	11	0	18	66	0	2	13	173	1	0	0	0	0	0	318
7:45 AM	0	32	12	0	28	104	0	1	6	190	6	0	0	0	0	0	379
8:00 AM	0	41	4	0	11	89	0	0	17	128	12	0	0	0	0	0	302
8:15 AM	0	52	12	0	16	88	0	0	25	174	9	0	0	0	0	0	376
8:30 AM	0	50	18	0	15	80	0	0	20	158	10	0	0	0	0	0	351
8:45 AM	0	41	12	0	20	79	0	0	20	202	7	0	0	0	0	0	381
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	312	82	0	138	621	0	4	121	1321	54	0	0	0	0	0	2653
APPROACH %'s :	0.00%	79.19%	20.81%	0.00%	18.09%	81.39%	0.00%	0.52%	8.09%	88.30%	3.61%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	184	46	0	62	336	0	0	82	662	38	0	0	0	0	0	1410
PEAK HR FACTOR :	0.000	0.885	0.639	0.000	0.775	0.944	0.000	0.000	0.820	0.819	0.792	0.000	0.000	0.000	0.000	0.000	0.925
	0.846				0.957				0.854								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	1	3	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	80	24	0	23	63	0	0	12	274	5	0	0	0	0	0	481
4:15 PM	0	106	27	0	22	65	0	0	11	293	8	0	0	0	0	0	532
4:30 PM	0	102	30	0	16	56	0	0	16	327	6	0	0	0	0	0	553
4:45 PM	0	100	36	0	14	59	0	0	10	352	12	0	0	0	0	0	583
5:00 PM	0	134	42	0	16	56	0	1	12	413	10	0	0	0	0	0	684
5:15 PM	0	122	37	0	19	55	0	0	16	381	5	0	0	0	0	0	635
5:30 PM	0	90	17	0	25	78	0	1	13	374	14	0	0	0	0	0	612
5:45 PM	0	90	28	0	13	63	0	1	7	295	6	0	0	0	0	0	503
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	824	241	0	148	495	0	3	97	2709	66	0	0	0	0	0	4583
APPROACH %'s :	0.00%	77.37%	22.63%	0.00%	22.91%	76.63%	0.00%	0.46%	3.38%	94.32%	2.30%	0.00%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	446	132	0	74	248	0	2	51	1520	41	0	0	0	0	0	2514
PEAK HR FACTOR :	0.000	0.832	0.786	0.000	0.740	0.795	0.000	0.500	0.797	0.920	0.732	0.000	0.000	0.000	0.000	0.000	0.919
	0.821				0.779				0.926								

National Data & Surveying Services Intersection Turning Movement Count

Location: Pacific Ave & 3rd St
City: Long Beach
Control: Signalized

Project ID: 18-05307-004
Date: 5/23/2018

Total

NS/EW Streets:	Pacific Ave				Pacific Ave				3rd St				3rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	0	0	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	18	0	3	0	41	18	0	0	0	0	1	10	213	4	0	320
7:15 AM	12	23	0	0	0	50	21	0	0	0	0	0	17	224	11	0	358
7:30 AM	9	14	0	2	0	53	18	0	0	0	0	0	11	210	5	0	322
7:45 AM	11	12	0	3	0	73	24	0	0	0	0	0	16	247	14	0	400
8:00 AM	9	25	0	0	0	60	24	0	0	0	0	0	16	214	11	0	359
8:15 AM	13	35	0	0	0	77	20	0	0	0	0	0	19	210	14	0	388
8:30 AM	22	34	0	0	0	62	21	0	0	0	0	0	9	188	19	0	355
8:45 AM	17	30	0	0	0	68	17	0	0	0	0	0	7	192	14	0	345
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	105	191	0	8	0	484	163	0	0	0	0	1	105	1698	92	0	2847
APPROACH %'s :	34.54%	62.83%	0.00%	2.63%	0.00%	74.81%	25.19%	0.00%	0.00%	0.00%	0.00%	100.00%	5.54%	89.60%	4.85%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	55	106	0	3	0	272	89	0	0	0	0	0	60	859	58	0	1502
PEAK HR FACTOR :	0.625	0.757	0.000	0.250	0.000	0.883	0.927	0.000	0.000	0.000	0.000	0.000	0.789	0.869	0.763	0.000	0.939
	0.732				0.930								0.882				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	0	0	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	26	66	0	0	0	57	13	0	0	0	0	0	17	80	21	0	280
4:15 PM	27	91	0	1	0	48	9	1	0	0	0	0	8	92	11	0	288
4:30 PM	26	88	0	0	0	53	6	0	0	0	0	0	11	89	17	0	290
4:45 PM	15	106	0	1	0	46	12	0	0	0	0	0	13	91	18	0	302
5:00 PM	28	122	0	1	0	36	10	0	0	0	0	0	17	98	23	0	335
5:15 PM	33	122	0	1	0	46	9	0	0	0	0	0	8	82	23	0	324
5:30 PM	27	91	0	2	0	42	14	0	0	0	0	0	9	86	14	0	285
5:45 PM	16	83	0	0	0	64	5	0	0	0	0	0	8	89	24	0	289
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	198	769	0	6	0	392	78	1	0	0	0	0	91	707	151	0	2393
APPROACH %'s :	20.35%	79.03%	0.00%	0.62%	0.00%	83.23%	16.56%	0.21%					9.59%	74.50%	15.91%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	102	438	0	3	0	181	37	0	0	0	0	0	49	360	81	0	1251
PEAK HR FACTOR :	0.773	0.898	0.000	0.750	0.000	0.854	0.771	0.000	0.000	0.000	0.000	0.000	0.721	0.918	0.880	0.000	0.934
	0.870				0.924								0.888				

National Data & Surveying Services Intersection Turning Movement Count

Location: Pacific Ave & Broadway
City: Long Beach
Control: Signalized

Project ID: 18-05307-005
Date: 5/23/2018

Total

NS/EW Streets:	Pacific Ave				Pacific Ave				Broadway				Broadway				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	1	2	0	0	1	2	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	28	7	0	3	45	0	0	9	81	30	0	0	0	0	0	203
7:15 AM	0	29	7	0	5	63	0	0	4	70	23	0	0	0	0	0	201
7:30 AM	0	21	12	0	13	49	0	1	4	93	25	0	0	0	0	0	218
7:45 AM	0	21	8	0	19	70	0	1	3	114	31	0	0	0	0	0	267
8:00 AM	0	26	10	0	12	64	0	1	12	124	26	0	0	0	0	0	275
8:15 AM	0	43	15	0	10	86	0	0	9	118	33	0	0	0	0	0	314
8:30 AM	0	44	9	0	13	58	0	0	12	114	19	0	0	0	0	0	269
8:45 AM	0	36	14	0	12	65	0	0	9	123	20	0	0	0	0	0	279
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	248	82	0	87	500	0	3	62	837	207	0	0	0	0	0	2026
APPROACH %'s :	0.00%	75.15%	24.85%	0.00%	14.75%	84.75%	0.00%	0.51%	5.61%	75.68%	18.72%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	149	48	0	47	273	0	1	42	479	98	0	0	0	0	0	1137
PEAK HR FACTOR :	0.000	0.847	0.800	0.000	0.904	0.794	0.000	0.250	0.875	0.966	0.742	0.000	0.000	0.000	0.000	0.000	0.905
	0.849				0.836				0.955								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	1	2	0	0	1	2	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	89	29	0	20	54	0	3	21	190	22	0	0	0	0	0	428
4:15 PM	0	99	30	0	11	45	0	0	15	182	22	0	0	0	0	0	404
4:30 PM	0	104	50	0	14	42	0	1	15	224	26	0	0	0	0	0	476
4:45 PM	0	108	38	0	5	51	0	1	21	202	13	0	0	0	0	0	439
5:00 PM	0	135	64	0	13	41	0	2	25	204	24	0	0	0	0	0	508
5:15 PM	0	128	50	0	16	32	0	1	15	164	8	0	0	0	0	0	414
5:30 PM	0	98	33	0	22	37	0	3	19	204	14	0	0	0	0	0	430
5:45 PM	0	68	30	0	24	41	0	1	10	219	15	0	0	0	0	0	408
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	829	324	0	125	343	0	12	141	1589	144	0	0	0	0	0	3507
APPROACH %'s :	0.00%	71.90%	28.10%	0.00%	26.04%	71.46%	0.00%	2.50%	7.52%	84.79%	7.68%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	475	202	0	48	166	0	5	76	794	71	0	0	0	0	0	1837
PEAK HR FACTOR :	0.000	0.880	0.789	0.000	0.750	0.814	0.000	0.625	0.760	0.886	0.683	0.000	0.000	0.000	0.000	0.000	0.904
	0.851				0.961				0.888								

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

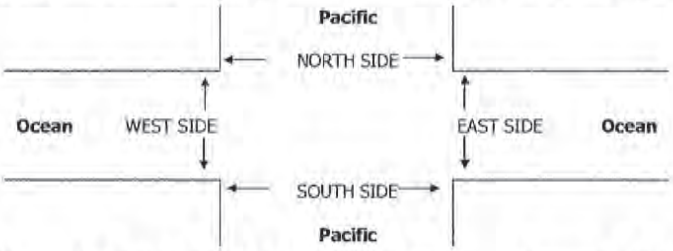
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Wed, May 25, 16	NORTH & SOUTH:	Pacific	LOCATION #:	13
	EAST & WEST:	Ocean	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Pacific			SOUTHBOUND Pacific			EASTBOUND Ocean			WESTBOUND Ocean				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL	NB 0	SB 0	EB X	WB X	TTL
AM	7:00 AM	1	0	1	9	0	31	15	86	2	1	379	18	543	0	0	0	0	0
	7:15 AM	2	0	2	12	0	38	14	131	0	1	493	20	713	0	0	0	1	1
	7:30 AM	2	0	0	9	0	58	23	121	1	1	438	31	684	0	0	0	1	1
	7:45 AM	1	0	0	14	0	51	30	133	0	1	510	45	785	0	0	0	1	1
	8:00 AM	0	1	1	19	0	53	38	127	0	2	420	30	691	0	0	0	2	2
	8:15 AM	1	0	0	18	1	59	39	119	0	6	412	42	697	0	0	0	4	4
	8:30 AM	1	0	2	11	0	57	39	134	1	3	422	32	702	0	0	0	0	0
	8:45 AM	3	2	2	14	2	44	33	127	2	9	330	41	609	0	0	0	6	6
	VOLUMES	11	3	8	106	3	391	231	978	6	24	3,404	259	5,424	0	0	0	15	15
	APPROACH %	50%	14%	36%	21%	1%	78%	19%	80%	0%	1%	92%	7%						
	APP/DEPART	22	/	493	500	/	18	1,215	/	1,107	3,687	/	3,806	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	3	1	3	62	1	220	146	513	1	12	1,764	149	2,875					
	APPROACH %	43%	14%	43%	22%	0%	78%	22%	78%	0%	1%	92%	8%						
	PEAK HR FACTOR		0.583			0.907			0.948			0.866		0.916					
	APP/DEPART	7	/	296	283	/	7	660	/	585	1,925	/	1,987	0					
PM	4:00 PM	3	1	1	30	0	39	41	379	1	2	222	22	741	0	0	0	2	2
	4:15 PM	2	2	2	28	0	32	32	299	1	3	243	24	668	0	0	0	1	1
	4:30 PM	1	2	2	22	0	36	50	343	1	5	245	32	739	0	0	1	5	6
	4:45 PM	1	0	3	30	0	31	41	405	0	1	275	27	814	0	0	0	1	1
	5:00 PM	1	2	2	23	0	54	32	385	3	3	274	30	809	0	0	0	2	2
	5:15 PM	0	0	4	33	0	51	44	346	1	6	235	33	753	0	0	0	5	5
	5:30 PM	1	2	6	24	1	32	34	320	2	2	233	20	677	0	0	0	0	0
	5:45 PM	0	0	1	33	0	33	33	325	0	3	234	29	691	0	0	0	3	3
	VOLUMES	9	9	21	223	1	308	307	2,802	9	25	1,961	217	5,892	0	0	1	19	20
	APPROACH %	23%	23%	54%	42%	0%	58%	10%	90%	0%	1%	89%	10%						
	APP/DEPART	39	/	532	532	/	16	3,118	/	3,065	2,203	/	2,279	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	3	4	11	108	0	172	167	1,479	5	15	1,029	122	3,115					
	APPROACH %	17%	22%	61%	39%	0%	61%	10%	90%	0%	1%	88%	10%						
	PEAK HR FACTOR		0.900			0.833			0.925			0.950		0.957					
	APP/DEPART	18	/	292	280	/	7	1,651	/	1,611	1,166	/	1,205	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Long Beach Blvd & Alondra Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-091
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Alondra Blvd				Alondra Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	17	98	8	0	18	132	24	0	17	74	9	0	21	161	26	0	605
7:15 AM	20	67	6	0	36	139	21	0	9	104	11	0	23	211	26	0	673
7:30 AM	30	108	13	0	41	176	25	0	26	127	17	0	32	176	39	0	810
7:45 AM	23	115	11	0	29	166	26	0	27	121	21	0	36	184	39	0	798
8:00 AM	23	113	23	0	32	148	26	0	29	108	11	0	31	186	44	0	774
8:15 AM	24	96	15	0	33	123	7	0	30	91	17	0	29	153	41	0	659
8:30 AM	13	102	8	0	35	109	13	0	15	70	16	0	17	141	46	0	585
8:45 AM	19	101	11	0	17	107	13	0	18	84	11	0	18	103	38	0	540
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	169	800	95	0	241	1100	155	0	171	779	113	0	207	1315	299	0	5444
APPROACH %'s :	15.88%	75.19%	8.93%	0.00%	16.11%	73.53%	10.36%	0.00%	16.09%	73.28%	10.63%	0.00%	11.37%	72.21%	16.42%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	96	403	53	0	138	629	98	0	91	460	60	0	122	757	148	0	3055
PEAK HR FACTOR :	0.800	0.876	0.576	0.000	0.841	0.893	0.942	0.000	0.784	0.906	0.714	0.000	0.847	0.897	0.841	0.000	0.943
	0.868				0.894				0.899				0.984				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	22	193	27	0	44	139	21	0	45	207	29	0	16	99	44	0	886
4:15 PM	12	176	29	0	40	156	28	0	27	231	19	0	29	113	52	0	912
4:30 PM	15	216	27	0	39	161	14	0	35	227	29	0	24	78	49	0	914
4:45 PM	19	221	31	0	50	158	16	0	41	224	21	0	26	88	40	0	935
5:00 PM	24	195	26	0	48	165	16	0	39	238	20	0	25	103	47	0	946
5:15 PM	22	220	43	0	46	143	12	0	39	248	31	0	19	106	41	0	970
5:30 PM	18	205	32	0	47	149	27	0	42	209	33	0	25	95	37	0	919
5:45 PM	29	164	34	0	53	142	27	0	39	227	25	0	24	83	46	0	893
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	161	1590	249	0	367	1213	161	0	307	1811	207	0	188	765	356	0	7375
APPROACH %'s :	8.05%	79.50%	12.45%	0.00%	21.08%	69.67%	9.25%	0.00%	13.20%	77.89%	8.90%	0.00%	14.36%	58.44%	27.20%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	83	841	132	0	191	615	71	0	161	919	105	0	95	392	165	0	3770
PEAK HR FACTOR :	0.865	0.951	0.767	0.000	0.955	0.932	0.657	0.000	0.958	0.926	0.795	0.000	0.913	0.925	0.878	0.000	0.972
	0.926				0.957				0.932				0.931				

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & Artesia Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-030
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Artesia Blvd				Artesia Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	35	74	12	0	30	189	19	2	5	31	29	1	58	183	36	1	705
7:15 AM	68	90	18	0	42	191	21	0	7	33	32	2	84	210	36	2	836
7:30 AM	65	95	22	0	51	182	24	1	9	46	28	0	75	244	51	12	905
7:45 AM	69	120	21	0	28	171	28	0	17	48	25	2	102	240	53	6	930
8:00 AM	58	99	19	0	33	160	26	2	9	46	23	0	86	157	47	6	771
8:15 AM	36	91	29	0	36	133	18	1	9	37	26	0	66	161	31	0	674
8:30 AM	36	82	30	0	32	132	23	1	10	42	36	1	48	156	31	0	660
8:45 AM	36	102	35	0	18	104	13	0	12	38	29	0	34	116	27	3	567
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	403	753	186	0	270	1262	172	7	78	321	228	6	553	1467	312	30	6048
APPROACH %'s :	30.03%	56.11%	13.86%	0.00%	15.78%	73.76%	10.05%	0.41%	12.32%	50.71%	36.02%	0.95%	23.41%	62.11%	13.21%	1.27%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	260	404	80	0	154	704	99	3	42	173	108	4	347	851	187	26	3442
PEAK HR FACTOR :	0.942	0.842	0.909	0.000	0.755	0.921	0.884	0.375	0.618	0.901	0.844	0.500	0.850	0.872	0.882	0.542	0.925
	0.886				0.930				0.889				0.880				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	45	175	54	0	32	124	8	0	56	198	65	0	25	60	27	1	870
4:15 PM	37	172	43	0	25	155	18	2	61	211	63	3	14	51	21	3	879
4:30 PM	34	183	60	0	46	144	16	0	82	268	94	1	19	57	41	0	1045
4:45 PM	37	180	38	0	38	141	18	0	56	252	70	4	20	69	29	1	953
5:00 PM	39	223	45	0	34	146	19	1	60	239	81	2	20	56	34	1	1000
5:15 PM	44	192	50	0	29	145	10	0	65	247	87	2	20	79	40	1	1011
5:30 PM	45	169	41	0	32	114	16	0	60	206	84	1	15	63	39	0	885
5:45 PM	30	149	52	0	38	106	16	0	53	185	81	4	28	82	47	2	873
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	311	1443	383	0	274	1075	121	3	493	1806	625	17	161	517	278	9	7516
APPROACH %'s :	14.55%	67.52%	17.92%	0.00%	18.60%	72.98%	8.21%	0.20%	16.76%	61.41%	21.25%	0.58%	16.68%	53.58%	28.81%	0.93%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	154	778	193	0	147	576	63	1	263	1006	332	9	79	261	144	3	4009
PEAK HR FACTOR :	0.875	0.872	0.804	0.000	0.799	0.986	0.829	0.250	0.802	0.938	0.883	0.563	0.988	0.826	0.878	0.750	0.959
	0.916				0.955				0.904				0.870				

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & Market St
City: Long Beach
Control: Signalized

Project ID: 18-05307-029
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Market St				Market St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	148	19	0	31	121	2	0	12	5	9	0	49	6	83	0	488
7:15 AM	7	165	21	0	41	158	6	0	16	9	12	0	60	8	97	0	600
7:30 AM	4	188	19	0	39	189	0	0	13	12	2	0	76	3	104	0	649
7:45 AM	4	187	31	0	44	174	4	0	17	7	5	0	66	10	87	0	636
8:00 AM	7	158	32	1	47	180	7	0	22	6	4	0	57	9	86	0	616
8:15 AM	6	161	41	0	46	181	6	1	8	8	4	0	56	9	66	0	593
8:30 AM	4	136	36	0	41	188	9	0	13	7	2	0	61	14	44	0	555
8:45 AM	7	156	53	1	43	159	3	0	9	5	9	0	41	8	44	0	538
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	42	1299	252	2	332	1350	37	1	110	59	47	0	466	67	611	0	4675
APPROACH %'s :	2.63%	81.44%	15.80%	0.13%	19.30%	78.49%	2.15%	0.06%	50.93%	27.31%	21.76%	0.00%	40.73%	5.86%	53.41%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	22	698	103	1	171	701	17	0	68	34	23	0	259	30	374	0	2501
PEAK HR FACTOR :	0.786	0.928	0.805	0.250	0.910	0.927	0.607	0.000	0.773	0.708	0.479	0.000	0.852	0.750	0.899	0.000	0.963
	0.928				0.950				0.845				0.906				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	179	53	0	92	205	7	0	7	7	9	0	33	7	37	0	641
4:15 PM	4	164	70	0	86	222	2	0	7	17	5	0	41	7	44	0	669
4:30 PM	17	149	60	0	112	217	10	1	6	11	5	0	30	2	33	0	653
4:45 PM	9	147	70	0	87	214	4	0	8	15	3	0	47	5	39	0	648
5:00 PM	11	189	59	0	84	246	8	0	13	18	5	0	48	8	46	0	735
5:15 PM	4	179	80	0	96	244	12	0	11	17	3	0	34	5	42	0	727
5:30 PM	11	187	64	1	94	224	7	0	8	22	6	0	39	7	51	0	721
5:45 PM	5	162	66	1	98	257	6	1	8	16	2	0	40	9	38	0	709
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	66	1356	522	2	749	1829	56	2	68	123	38	0	312	50	330	0	5503
APPROACH %'s :	3.39%	69.68%	26.82%	0.10%	28.41%	69.39%	2.12%	0.08%	29.69%	53.71%	16.59%	0.00%	45.09%	7.23%	47.69%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	31	717	269	2	372	971	33	1	40	73	16	0	161	29	177	0	2892
PEAK HR FACTOR :	0.705	0.948	0.841	0.500	0.949	0.945	0.688	0.250	0.769	0.830	0.667	0.000	0.839	0.806	0.868	0.000	0.984
	0.969				0.951				0.896				0.900				

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & Del Amo Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-028
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	44	97	13	0	15	115	53	0	23	108	25	2	16	351	40	0	902
7:15 AM	61	93	7	0	16	148	61	0	31	117	39	1	29	355	29	0	987
7:30 AM	55	96	10	0	30	148	59	0	29	142	41	1	16	424	25	0	1076
7:45 AM	72	121	14	0	25	185	77	0	33	121	43	1	36	342	21	0	1091
8:00 AM	54	102	8	0	19	148	63	0	49	174	66	1	34	390	24	0	1132
8:15 AM	70	119	14	0	29	171	52	0	25	146	58	1	22	354	34	0	1095
8:30 AM	79	103	18	0	38	154	33	0	24	207	58	3	43	319	23	0	1102
8:45 AM	63	107	12	0	28	146	46	0	44	153	70	3	23	329	20	0	1044
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	498	838	96	0	200	1215	444	0	258	1168	400	13	219	2864	216	0	8429
APPROACH %'s :	34.78%	58.52%	6.70%	0.00%	10.76%	65.36%	23.88%	0.00%	14.03%	63.51%	21.75%	0.71%	6.64%	86.81%	6.55%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	275	445	54	0	111	658	225	0	131	648	225	6	135	1405	102	0	4420
PEAK HR FACTOR :	0.870	0.919	0.750	0.000	0.730	0.889	0.731	0.000	0.668	0.783	0.852	0.500	0.785	0.901	0.750	0.000	0.976
	0.935				0.866				0.865				0.916				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	45	132	23	0	45	131	30	0	71	393	85	0	15	159	36	0	1165
4:15 PM	49	166	24	0	42	136	31	0	54	358	81	0	38	175	39	1	1194
4:30 PM	44	142	24	0	53	157	29	0	66	412	89	0	27	159	27	1	1230
4:45 PM	45	158	32	0	32	163	36	0	59	364	86	2	41	185	34	0	1237
5:00 PM	52	165	20	0	40	173	31	0	66	417	91	0	29	149	36	0	1269
5:15 PM	50	205	25	0	47	154	28	0	72	401	75	1	41	188	26	0	1313
5:30 PM	58	184	28	0	46	140	31	0	55	433	79	1	30	172	35	0	1292
5:45 PM	50	180	30	0	42	145	31	0	52	389	84	0	31	222	33	0	1289
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	393	1332	206	0	347	1199	247	0	495	3167	670	4	252	1409	266	2	9989
APPROACH %'s :	20.35%	68.98%	10.67%	0.00%	19.35%	66.87%	13.78%	0.00%	11.42%	73.04%	15.45%	0.09%	13.06%	73.04%	13.79%	0.10%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	210	734	103	0	175	612	121	0	245	1640	329	2	131	731	130	0	5163
PEAK HR FACTOR :	0.905	0.895	0.858	0.000	0.931	0.884	0.976	0.000	0.851	0.947	0.904	0.500	0.799	0.823	0.903	0.000	0.983
	0.935				0.930				0.965				0.867				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Long Beach Blvd & San Antonio Dr
City: Long Beach
Control: Signalized

Project ID: 18-05307-027
Date: 5/10/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				San Antonio Dr				San Antonio Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	2	0	0	1.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	8	99	18	0	13	143	10	0	8	10	7	0	48	8	25	0	397
7:15 AM	2	113	33	0	13	186	12	0	12	13	4	0	88	21	23	0	520
7:30 AM	9	135	27	0	13	172	9	0	12	20	8	0	91	16	25	0	537
7:45 AM	3	140	34	0	11	237	14	0	8	16	8	0	100	26	31	0	628
8:00 AM	9	195	26	0	17	177	12	0	15	19	5	0	89	24	22	0	610
8:15 AM	8	154	35	0	26	211	13	0	17	15	11	0	108	36	32	0	666
8:30 AM	9	173	26	0	17	220	25	1	26	19	13	0	66	40	26	0	661
8:45 AM	7	123	25	0	17	176	37	0	20	27	12	0	78	53	31	0	606
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	55	1132	224	0	127	1522	132	1	118	139	68	0	668	224	215	0	4625
APPROACH %'s :	3.90%	80.23%	15.88%	0.00%	7.13%	85.41%	7.41%	0.06%	36.31%	42.77%	20.92%	0.00%	60.34%	20.23%	19.42%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	29	662	121	0	71	845	64	1	66	69	37	0	363	126	111	0	2565
PEAK HR FACTOR :	0.806	0.849	0.864	0.000	0.683	0.891	0.640	0.250	0.635	0.908	0.712	0.000	0.840	0.788	0.867	0.000	0.963
	0.883				0.933				0.741				0.852				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	2	0	0	1.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	213	69	0	34	217	10	0	14	42	10	0	54	20	21	1	710
4:15 PM	8	185	63	0	39	211	9	0	17	24	8	0	78	40	28	0	710
4:30 PM	3	208	68	0	33	208	15	0	16	41	9	0	71	32	28	0	732
4:45 PM	7	203	78	0	38	195	13	0	28	22	12	0	83	25	31	0	735
5:00 PM	6	246	61	0	47	197	13	0	20	39	11	0	85	25	38	0	788
5:15 PM	4	239	72	0	32	188	18	0	34	32	8	0	70	31	34	2	764
5:30 PM	4	234	57	0	41	202	5	0	23	32	13	0	64	23	36	0	734
5:45 PM	1	198	43	0	46	195	12	0	15	27	12	0	67	35	26	1	678
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	38	1726	511	0	310	1613	95	0	167	259	83	0	572	231	242	4	5851
APPROACH %'s :	1.67%	75.87%	22.46%	0.00%	15.36%	79.93%	4.71%	0.00%	32.81%	50.88%	16.31%	0.00%	54.53%	22.02%	23.07%	0.38%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	21	922	268	0	158	782	49	0	105	125	44	0	302	104	139	2	3021
PEAK HR FACTOR :	0.750	0.937	0.859	0.000	0.840	0.968	0.681	0.000	0.772	0.801	0.846	0.000	0.888	0.839	0.914	0.250	0.958
	0.961				0.962				0.926				0.924				

National Data & Surveying Services

Intersection Turning Movement Count

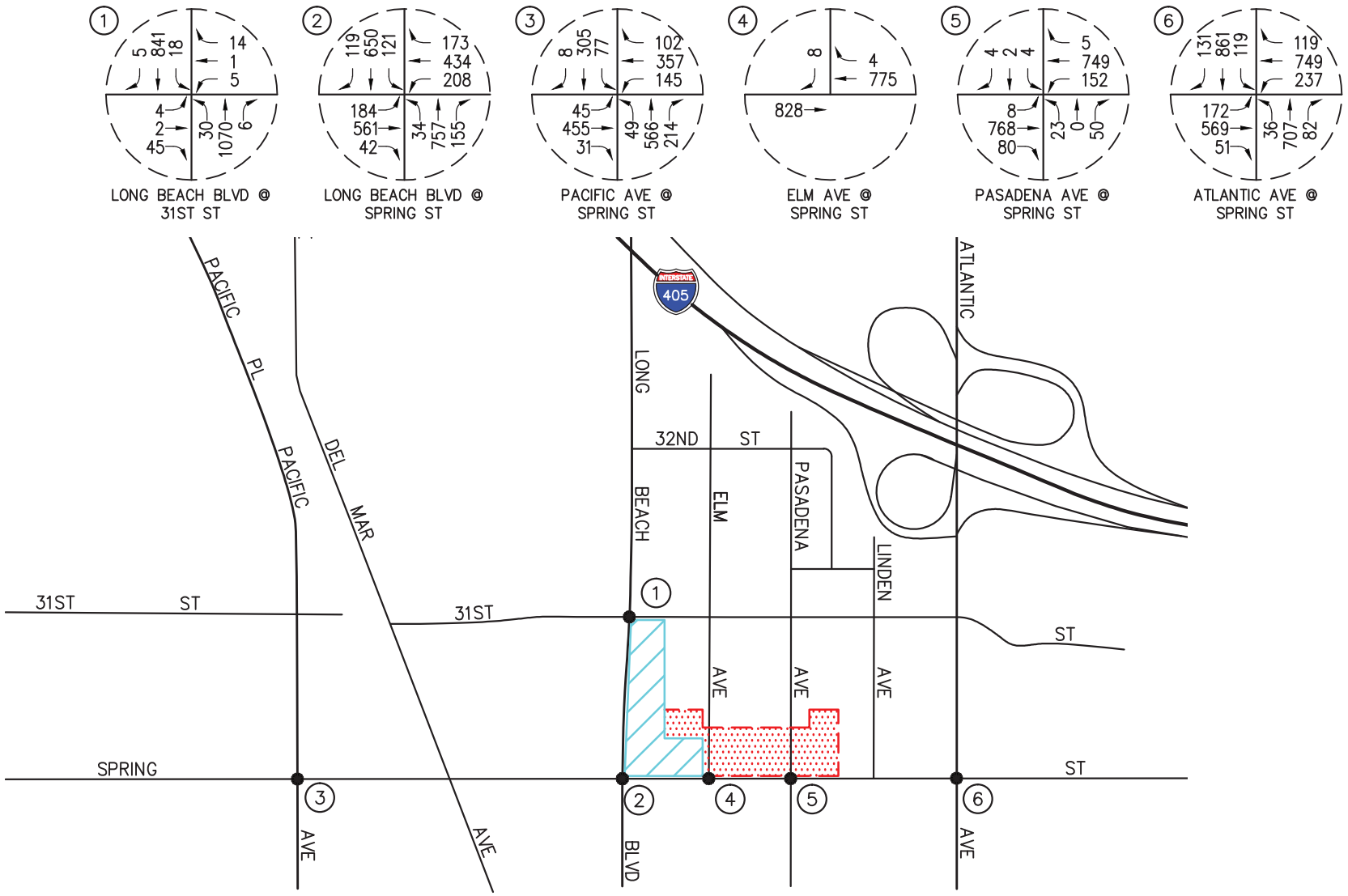
Location: Long Beach Blvd & Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 18-05307-026
Date: 5/10/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Wardlow Rd				Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	75	88	13	0	6	137	80	6	40	57	8	3	9	143	8	0	673
7:15 AM	61	107	16	1	12	167	93	0	45	82	8	6	13	183	6	0	800
7:30 AM	83	143	23	0	14	188	101	1	56	97	5	4	19	169	4	0	907
7:45 AM	75	211	31	0	20	202	97	0	62	121	8	7	27	181	2	0	1044
8:00 AM	56	191	32	2	13	186	101	0	67	127	6	6	18	181	9	0	995
8:15 AM	69	181	28	1	12	166	94	3	60	129	11	9	15	171	11	0	960
8:30 AM	62	211	27	1	8	176	91	0	53	114	7	5	18	125	10	0	908
8:45 AM	67	190	28	2	10	153	86	4	71	142	9	3	23	166	14	0	968
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	548	1322	198	7	95	1375	743	14	454	869	62	43	142	1319	64	0	7255
APPROACH %'s :	26.41%	63.71%	9.54%	0.34%	4.27%	61.74%	33.36%	0.63%	31.79%	60.85%	4.34%	3.01%	9.31%	86.49%	4.20%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	262	794	118	4	53	730	383	3	242	491	32	27	78	658	32	0	3907
PEAK HR FACTOR :	0.873	0.941	0.922	0.500	0.663	0.903	0.948	0.250	0.903	0.952	0.727	0.750	0.722	0.909	0.727	0.000	0.936
	0.929				0.916				0.947				0.914				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	61	212	25	1	14	154	90	3	61	183	9	12	22	187	11	0	1045
4:15 PM	79	239	32	0	26	194	97	2	55	217	18	13	27	146	18	0	1163
4:30 PM	88	236	52	0	28	174	86	1	53	200	12	12	22	157	16	0	1137
4:45 PM	74	257	49	1	34	174	97	2	70	218	14	10	18	154	15	0	1187
5:00 PM	68	248	47	2	20	186	86	1	62	207	8	6	18	177	10	0	1146
5:15 PM	80	266	29	1	22	180	87	2	51	220	8	6	22	192	17	0	1183
5:30 PM	77	245	43	0	22	168	80	1	64	259	11	9	26	147	18	0	1170
5:45 PM	79	244	27	1	22	151	71	0	68	200	8	6	23	155	19	0	1074
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	606	1947	304	6	188	1381	694	12	484	1704	88	74	178	1315	124	0	9105
APPROACH %'s :	21.17%	68.01%	10.62%	0.21%	8.26%	60.70%	30.51%	0.53%	20.60%	72.51%	3.74%	3.15%	11.01%	81.32%	7.67%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	299	1016	168	4	98	708	350	6	247	904	41	31	84	670	60	0	4686
PEAK HR FACTOR :	0.934	0.955	0.857	0.500	0.721	0.952	0.902	0.750	0.882	0.873	0.732	0.775	0.808	0.872	0.833	0.000	0.987
	0.976				0.946				0.891				0.881				



n:\3700\2163722 – the citadel, long beach\dwg\3722 f3–2.dwg LDP 14:24:55 12–01–2016 aguilar

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

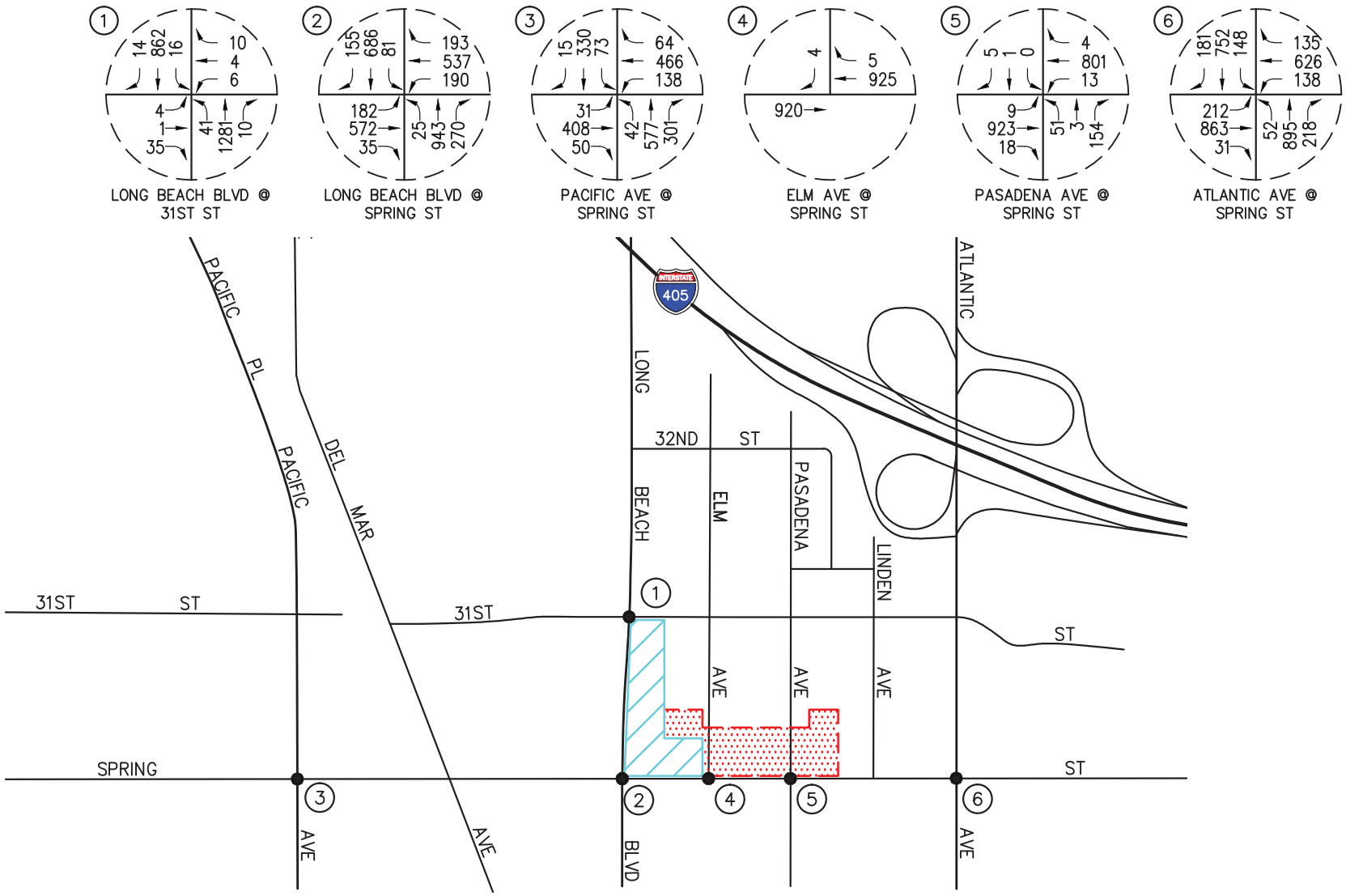
= PROJECT SITE

= EXISTING SITE

FIGURE 3–2

EXISTING AM PEAK HOUR TRAFFIC VOLUMES

SALVATION ARMY LONG BEACH CITADEL EXPANSION PROJECT, LONG BEACH



n:\3700\2163722 – the citadel, long beach\dwg\3722 f3-3.dwg LDP 14:25:25 12-01-2016 aguilar

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

= EXISTING SITE

FIGURE 3-3

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

SALVATION ARMY LONG BEACH CITADEL EXPANSION PROJECT, LONG BEACH

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & Willow St
City: Long Beach
Control: Signalized

Project ID: 18-05307-024
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	1	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	54	77	20	2	16	79	30	11	34	162	22	0	10	196	17	0	730
7:15 AM	48	126	28	4	15	117	32	9	49	197	16	0	29	206	19	0	895
7:30 AM	67	132	20	4	31	126	38	14	59	252	35	0	20	265	27	0	1090
7:45 AM	60	172	33	6	22	139	60	21	62	255	24	0	37	275	23	0	1189
8:00 AM	46	126	22	3	40	129	51	7	59	251	31	0	26	200	29	0	1020
8:15 AM	48	145	27	4	26	133	44	6	53	230	23	0	22	184	15	0	960
8:30 AM	36	110	20	4	28	113	35	8	64	231	27	0	27	200	25	0	928
8:45 AM	41	110	18	5	30	123	45	5	58	180	27	0	24	162	15	0	843
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	400	998	188	32	208	959	335	81	438	1758	205	0	195	1688	170	0	7655
APPROACH %'s :	24.72%	61.68%	11.62%	1.98%	13.14%	60.58%	21.16%	5.12%	18.24%	73.22%	8.54%	0.00%	9.50%	82.22%	8.28%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	221	575	102	17	119	527	193	48	233	988	113	0	105	924	94	0	4259
PEAK HR FACTOR :	0.825	0.836	0.773	0.708	0.744	0.948	0.804	0.571	0.940	0.969	0.807	0.000	0.709	0.840	0.810	0.000	0.896
	0.844				0.916				0.964				0.838				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	1	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	46	158	25	10	51	160	41	8	52	286	42	0	47	258	20	0	1204
4:15 PM	45	103	43	11	42	145	50	12	58	335	35	0	38	282	13	0	1212
4:30 PM	44	142	49	5	46	168	55	4	40	292	36	0	49	252	24	0	1206
4:45 PM	44	124	34	11	49	131	37	8	53	321	39	0	40	266	26	0	1183
5:00 PM	32	142	42	6	54	160	58	7	44	285	42	0	42	254	13	0	1181
5:15 PM	56	120	27	6	58	135	46	7	63	367	33	0	51	313	24	0	1306
5:30 PM	51	138	37	6	46	149	44	5	47	277	54	0	49	295	20	0	1218
5:45 PM	51	79	28	12	51	142	47	9	55	289	41	0	35	213	16	0	1068
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	369	1006	285	67	397	1190	378	60	412	2452	322	0	351	2133	156	0	9578
APPROACH %'s :	21.37%	58.25%	16.50%	3.88%	19.60%	58.77%	18.67%	2.96%	12.93%	76.96%	10.11%	0.00%	13.30%	80.80%	5.91%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	183	524	140	29	207	575	185	27	207	1250	168	0	182	1128	83	0	4888
PEAK HR FACTOR :	0.817	0.923	0.833	0.659	0.892	0.898	0.797	0.844	0.821	0.851	0.778	0.000	0.892	0.901	0.798	0.000	0.936
	0.944				0.891				0.877				0.898				

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 18-05307-023
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Pacific Coast Hwy				Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	21	64	6	1	25	76	23	0	17	143	13	0	13	201	18	0	621
7:15 AM	44	104	10	0	36	69	21	1	30	168	20	0	17	221	14	0	755
7:30 AM	34	140	15	2	53	123	26	2	18	209	10	0	30	270	14	0	946
7:45 AM	58	169	13	2	59	132	32	1	25	200	17	0	32	299	26	0	1065
8:00 AM	42	128	19	1	33	109	29	2	21	177	21	0	25	289	17	0	913
8:15 AM	29	119	8	0	28	102	26	2	28	183	14	0	18	231	23	0	811
8:30 AM	24	94	11	0	21	87	21	4	34	191	25	0	31	255	20	0	818
8:45 AM	24	94	19	2	25	111	28	2	23	195	18	0	32	208	29	0	810
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	276	912	101	8	280	809	206	14	196	1466	138	0	198	1974	161	0	6739
APPROACH %'s :	21.28%	70.32%	7.79%	0.62%	21.39%	61.80%	15.74%	1.07%	10.89%	81.44%	7.67%	0.00%	8.49%	84.61%	6.90%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	163	556	55	5	173	466	113	7	92	769	62	0	105	1089	80	0	3735
PEAK HR FACTOR :	0.703	0.822	0.724	0.625	0.733	0.883	0.883	0.875	0.821	0.920	0.738	0.000	0.820	0.911	0.769	0.000	0.877
	0.805				0.847				0.954				0.892				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	34	127	24	4	29	120	21	9	41	300	27	0	27	186	31	0	980
4:15 PM	34	140	16	1	55	135	35	1	33	226	33	0	33	191	17	0	950
4:30 PM	29	127	18	5	43	135	36	4	42	341	33	0	24	200	22	0	1059
4:45 PM	35	163	31	6	40	129	33	1	43	318	19	0	28	155	28	0	1029
5:00 PM	21	125	13	0	40	120	12	0	50	393	28	0	24	220	33	0	1079
5:15 PM	26	149	24	2	34	136	30	2	42	328	21	0	18	192	26	0	1030
5:30 PM	28	125	14	1	38	118	25	3	27	322	23	0	26	183	27	0	960
5:45 PM	29	112	21	2	53	144	27	3	28	251	24	0	23	177	19	0	913
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	236	1068	161	21	332	1037	219	23	306	2479	208	0	203	1504	203	0	8000
APPROACH %'s :	15.88%	71.87%	10.83%	1.41%	20.61%	64.37%	13.59%	1.43%	10.22%	82.83%	6.95%	0.00%	10.63%	78.74%	10.63%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	111	564	86	13	157	520	111	7	177	1380	101	0	94	767	109	0	4197
PEAK HR FACTOR :	0.793	0.865	0.694	0.542	0.913	0.956	0.771	0.438	0.885	0.878	0.765	0.000	0.839	0.872	0.826	0.000	0.972
	0.823				0.912				0.880				0.875				

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & Anaheim St
City: Long Beach
Control: Signalized

Project ID: 18-05307-022
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Anaheim St				Anaheim St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	0	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	18	53	12	5	18	61	7	1	0	141	18	0	2	210	9	0	555
7:15 AM	26	80	16	2	20	51	10	0	0	173	13	0	2	232	30	0	655
7:30 AM	21	98	14	3	27	91	13	1	0	193	17	0	1	292	20	0	791
7:45 AM	32	112	19	2	35	102	18	1	0	212	15	0	1	290	25	0	864
8:00 AM	34	103	20	4	22	98	11	0	0	212	13	0	1	259	29	0	806
8:15 AM	25	93	18	2	18	92	14	3	0	183	17	0	1	224	30	0	720
8:30 AM	27	80	11	4	24	98	13	0	0	184	26	0	0	207	23	0	697
8:45 AM	28	81	15	0	29	83	12	2	0	186	27	0	1	209	22	0	695
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	211	700	125	22	193	676	98	8	0	1484	146	0	9	1923	188	0	5783
APPROACH %'s :	19.94%	66.16%	11.81%	2.08%	19.79%	69.33%	10.05%	0.82%	0.00%	91.04%	8.96%	0.00%	0.42%	90.71%	8.87%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	112	406	71	11	102	383	56	5	0	800	62	0	4	1065	104	0	3181
PEAK HR FACTOR :	0.824	0.906	0.888	0.688	0.729	0.939	0.778	0.417	0.000	0.943	0.912	0.000	1.000	0.912	0.867	0.000	0.920
	0.909				0.875				0.949				0.928				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	0	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	38	127	23	3	27	111	21	5	2	329	20	0	1	179	30	0	916
4:15 PM	39	134	25	2	42	117	14	2	0	337	24	0	2	210	33	0	981
4:30 PM	23	116	24	4	35	129	19	4	2	324	27	0	0	171	33	0	911
4:45 PM	39	133	24	1	42	106	14	5	2	284	28	0	2	191	34	0	905
5:00 PM	41	106	30	0	35	95	14	1	0	262	15	0	2	174	29	0	804
5:15 PM	35	133	22	4	37	110	11	2	0	352	32	0	0	189	24	0	951
5:30 PM	27	116	17	2	32	108	22	1	1	293	27	0	1	169	24	0	840
5:45 PM	23	91	19	4	38	113	17	5	2	262	18	0	1	176	21	0	790
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	265	956	184	20	288	889	132	25	9	2443	191	0	9	1459	228	0	7098
APPROACH %'s :	18.60%	67.09%	12.91%	1.40%	21.59%	66.64%	9.90%	1.87%	0.34%	92.43%	7.23%	0.00%	0.53%	86.03%	13.44%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	139	510	96	10	146	463	68	16	6	1274	99	0	5	751	130	0	3713
PEAK HR FACTOR :	0.891	0.951	0.960	0.625	0.869	0.897	0.810	0.800	0.750	0.945	0.884	0.000	0.625	0.894	0.956	0.000	0.946
	0.944				0.926				0.955				0.904				

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC, tel: 714 253 7888 cs@aimtd.com

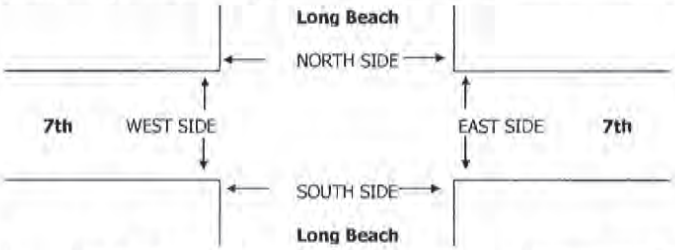
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Wed, May 25, 16	NORTH & SOUTH:	Long Beach	LOCATION #:	21
	EAST & WEST:	7th	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, ▲ N, S ▼, E ►

☑ Add U-Turns to Left Turns

		NORTHBOUND Long Beach			SOUTHBOUND Long Beach			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 1	WT 3	WR 1	TOTAL	NB 0	SB X	EB X	WB X	TTL
AM	7:00 AM	28	62	0	0	51	8	0	0	0	27	296	14	486	0	0	0	0	0
	7:15 AM	35	84	0	0	69	22	0	0	0	29	352	14	605	1	0	0	0	1
	7:30 AM	45	99	0	0	103	34	0	0	0	22	338	16	657	5	0	0	0	5
	7:45 AM	37	92	0	0	89	37	0	0	0	20	352	17	644	4	0	0	0	4
	8:00 AM	43	84	0	0	126	24	0	0	0	23	334	24	658	3	0	0	0	3
	8:15 AM	34	86	0	0	101	23	0	0	0	34	257	17	552	7	0	0	0	7
	8:30 AM	28	90	0	0	90	17	0	0	0	24	286	14	549	6	0	0	0	6
	8:45 AM	38	98	0	0	110	21	0	0	0	43	254	17	581	3	0	0	0	3
	VOLUMES	288	695	0	0	739	186	0	0	0	222	2,469	133	4,732	29	0	0	0	29
	APPROACH %	29%	71%	0%	0%	80%	20%	0%	0%	0%	8%	87%	5%						
	APP/DEPART	983	/	828	925	/	990	0	/	0	2,824	/	2,914	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	160	359	0	0	387	117	0	0	0	94	1,376	71	2,564					
	APPROACH %	31%	69%	0%	0%	77%	23%	0%	0%	0%	6%	89%	5%						
	PEAK HR FACTOR		0.901			0.840			0.000			0.975		0.974					
	APP/DEPART	519	/	430	504	/	494	0	/	0	1,541	/	1,640	0					
PM	4:00 PM	20	145	0	0	109	18	0	0	0	21	136	12	461	3	0	0	0	3
	4:15 PM	27	97	0	0	99	16	0	0	0	32	162	17	450	3	0	0	0	3
	4:30 PM	32	122	0	0	107	11	0	0	0	17	169	18	476	7	0	0	0	7
	4:45 PM	25	131	0	0	80	13	0	0	0	11	156	17	433	6	0	0	0	6
	5:00 PM	33	122	0	0	86	11	0	0	0	28	152	16	448	5	0	0	0	5
	5:15 PM	24	123	0	0	132	20	0	0	0	36	171	23	529	7	0	0	0	7
	5:30 PM	36	112	0	0	99	23	0	0	0	21	155	14	460	5	0	0	0	5
	5:45 PM	21	124	0	0	91	8	0	0	0	25	172	26	467	3	0	0	0	3
	VOLUMES	218	976	0	0	803	120	0	0	0	191	1,273	143	3,724	39	0	0	0	39
	APPROACH %	18%	82%	0%	0%	87%	13%	0%	0%	0%	12%	79%	9%						
	APP/DEPART	1,194	/	1,119	923	/	1,033	0	/	0	1,607	/	1,572	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	114	481	0	0	408	62	0	0	0	110	650	79	1,904					
	APPROACH %	19%	81%	0%	0%	87%	13%	0%	0%	0%	13%	77%	9%						
	PEAK HR FACTOR		0.960			0.773			0.000			0.912		0.900					
	APP/DEPART	595	/	560	470	/	538	0	/	0	839	/	806	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & 6th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-008
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				6th St				6th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	1	2	0	0	1	3	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	62	10	0	19	64	0	4	12	106	7	0	0	0	0	0	284
7:15 AM	0	79	4	0	13	68	0	5	25	139	21	0	0	0	0	0	354
7:30 AM	0	90	9	0	20	70	0	4	23	170	11	0	0	0	0	0	397
7:45 AM	0	104	8	0	21	88	0	5	21	155	11	0	0	0	0	0	413
8:00 AM	0	105	6	0	14	96	0	3	15	119	13	0	0	0	0	0	371
8:15 AM	0	79	7	0	15	94	0	2	18	143	23	0	0	0	0	0	381
8:30 AM	0	80	11	0	19	85	0	2	18	137	14	0	0	0	0	0	366
8:45 AM	0	84	12	0	12	102	0	6	27	145	25	0	0	0	0	0	413
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	683	67	0	133	667	0	31	159	1114	125	0	0	0	0	0	2979
APPROACH %'s :	0.00%	91.07%	8.93%	0.00%	16.00%	80.26%	0.00%	3.73%	11.37%	79.69%	8.94%	0.00%					
PEAK HR :	**07:30 AM - 08:30 AM**																TOTAL
PEAK HR VOL :	0	378	30	0	70	348	0	14	77	587	58	0	0	0	0	0	1562
PEAK HR FACTOR :	0.000	0.900	0.833	0.000	0.833	0.906	0.000	0.700	0.837	0.863	0.630	0.000	0.000	0.000	0.000	0.000	0.946
		0.911				0.947				0.885							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	1	2	0	0	1	3	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	124	16	0	27	86	0	7	28	285	19	0	0	0	0	0	592
4:15 PM	0	106	16	0	19	86	0	7	31	264	26	0	0	0	0	0	555
4:30 PM	0	116	12	0	36	98	0	4	34	340	25	0	0	0	0	0	665
4:45 PM	0	114	17	0	24	93	0	11	29	368	19	0	0	0	0	0	675
5:00 PM	0	123	12	0	14	93	0	5	38	424	20	0	0	0	0	0	729
5:15 PM	0	104	14	0	19	91	0	15	48	385	21	0	0	0	0	0	697
5:30 PM	0	101	17	0	22	89	0	11	29	339	22	0	0	0	0	0	630
5:45 PM	0	94	14	0	30	109	0	7	23	278	18	0	0	0	0	0	573
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	882	118	0	191	745	0	67	260	2683	170	0	0	0	0	0	5116
APPROACH %'s :	0.00%	88.20%	11.80%	0.00%	19.04%	74.28%	0.00%	6.68%	8.35%	86.19%	5.46%	0.00%					
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	0	457	55	0	93	375	0	35	149	1517	85	0	0	0	0	0	2766
PEAK HR FACTOR :	0.000	0.929	0.809	0.000	0.646	0.957	0.000	0.583	0.776	0.894	0.850	0.000	0.000	0.000	0.000	0.000	0.949
		0.948				0.911				0.908							

National Data & Surveying Services Intersection Turning Movement Count

Location: Long Beach Blvd & 3rd St
City: Long Beach
Control: Signalized

Project ID: 18-05307-009
Date: 5/23/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				3rd St				3rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	0	0	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	39	0	3	0	49	16	0	0	0	0	0	6	209	18	0	350
7:15 AM	10	29	0	2	0	44	11	0	0	0	0	0	8	225	17	0	346
7:30 AM	19	35	0	1	0	46	11	0	0	0	0	0	11	218	16	0	357
7:45 AM	12	36	0	1	0	39	15	0	0	0	0	0	18	217	22	0	360
8:00 AM	9	51	0	0	0	85	23	0	0	0	0	0	12	239	16	0	435
8:15 AM	12	46	0	3	0	78	21	0	0	0	0	0	13	207	17	0	397
8:30 AM	17	47	0	2	0	77	21	0	0	0	0	0	7	220	15	0	406
8:45 AM	16	68	0	1	0	54	22	0	0	0	0	0	15	194	12	0	382
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	105	351	0	13	0	472	140	0	0	0	0	0	90	1729	133	0	3033
APPROACH %'s :	22.39%	74.84%	0.00%	2.77%	0.00%	77.12%	22.88%	0.00%					4.61%	88.58%	6.81%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	54	212	0	6	0	294	87	0	0	0	0	0	47	860	60	0	1620
PEAK HR FACTOR :	0.794	0.779	0.000	0.500	0.000	0.865	0.946	0.000	0.000	0.000	0.000	0.000	0.783	0.900	0.882	0.000	0.931
	0.800				0.882								0.905				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	0	0	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	20	56	0	0	0	79	16	0	0	0	0	0	12	83	16	0	282
4:15 PM	20	65	0	0	0	82	15	0	0	0	0	0	7	89	19	0	297
4:30 PM	24	75	0	0	0	90	16	0	0	0	0	0	9	96	22	0	332
4:45 PM	18	72	0	4	0	80	22	0	0	0	0	0	10	93	26	0	325
5:00 PM	27	96	0	1	0	88	15	0	0	0	0	0	17	85	25	0	354
5:15 PM	25	69	0	0	0	76	18	0	0	0	0	0	10	86	16	0	300
5:30 PM	38	62	0	1	0	79	16	0	0	0	0	0	13	84	17	0	310
5:45 PM	24	70	0	1	0	92	16	0	0	0	0	0	6	88	21	0	318
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	196	565	0	7	0	666	134	0	0	0	0	0	84	704	162	0	2518
APPROACH %'s :	25.52%	73.57%	0.00%	0.91%	0.00%	83.25%	16.75%	0.00%					8.84%	74.11%	17.05%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	94	312	0	5	0	334	71	0	0	0	0	0	46	360	89	0	1311
PEAK HR FACTOR :	0.870	0.813	0.000	0.313	0.000	0.928	0.807	0.000	0.000	0.000	0.000	0.000	0.676	0.938	0.856	0.000	0.926
	0.829				0.955								0.959				

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

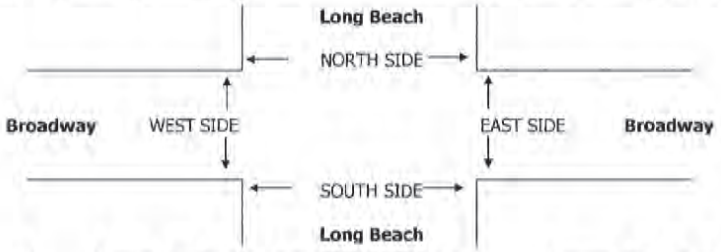
DATE:				
Thu, May 26, 16	LOCATION:	Long Beach	PROJECT #:	SC0972
	NORTH & SOUTH:	Long Beach	LOCATION #:	4
	EAST & WEST:	Broadway	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Long Beach			SOUTHBOUND Long Beach			EASTBOUND Broadway			WESTBOUND Broadway				U-TURNS				
	LANES:	NL X	NT 2	NR 0	SL 2	ST 1	SR X	EL 1	ET 2	ER 0	WL X	WT X	WR X	TOTAL	NB X	SB 0	EB X	WB X	TTL
AM	7:00 AM	0	29	2	13	52	0	7	56	26	0	0	0	185	0	2	0	0	2
	7:15 AM	0	35	5	11	52	0	11	52	24	0	0	0	190	0	3	0	0	3
	7:30 AM	0	40	1	13	68	0	12	53	18	0	0	0	205	0	2	0	0	2
	7:45 AM	0	44	6	17	74	0	13	73	22	0	0	0	249	0	0	0	0	0
	8:00 AM	0	39	7	10	83	0	16	72	38	0	0	0	265	0	0	0	0	0
	8:15 AM	0	47	7	12	48	0	13	73	41	0	0	0	241	0	1	0	0	1
	8:30 AM	0	45	1	14	65	0	19	67	30	0	0	0	241	0	1	0	0	1
	8:45 AM	0	58	1	20	70	0	17	84	21	0	0	0	271	0	4	0	0	4
	VOLUMES	0	337	30	110	512	0	108	530	220	0	0	0	1,847	0	13	0	0	13
	APPROACH %	0%	92%	8%	18%	82%	0%	13%	62%	26%	0%	0%	0%						
	APP/DEPART	367	/	458	622	/	732	858	/	657	0	/	0	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	189	16	56	266	0	65	296	130	0	0	0	1,018					
	APPROACH %	0%	92%	8%	17%	83%	0%	13%	60%	26%	0%	0%	0%						
	PEAK HR FACTOR		0.869			0.866			0.967			0.000		0.939					
	APP/DEPART	205	/	260	322	/	396	491	/	362	0	/	0	0					
PM	4:00 PM	0	60	7	20	53	0	23	189	18	0	0	0	370	0	4	0	0	4
	4:15 PM	0	57	5	26	50	0	28	239	15	0	0	0	420	0	1	0	0	1
	4:30 PM	0	64	15	41	45	0	32	242	16	0	0	0	455	0	2	0	0	2
	4:45 PM	0	60	5	20	40	0	25	263	19	0	0	0	432	0	1	0	0	1
	5:00 PM	0	60	14	27	51	0	29	267	12	0	0	0	460	0	1	0	0	1
	5:15 PM	0	70	11	25	67	0	25	273	14	0	0	0	485	0	0	0	0	0
	5:30 PM	0	72	11	25	73	0	37	253	17	0	0	0	488	0	2	0	0	2
	5:45 PM	0	53	7	24	59	0	25	219	24	0	0	0	411	0	2	0	0	2
	VOLUMES	0	496	75	208	438	0	224	1,945	135	0	0	0	3,521	0	13	0	0	13
	APPROACH %	0%	87%	13%	32%	68%	0%	10%	84%	6%	0%	0%	0%						
	APP/DEPART	571	/	733	646	/	573	2,304	/	2,215	0	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	262	41	97	231	0	116	1,056	62	0	0	0	1,865					
	APPROACH %	0%	86%	14%	30%	70%	0%	9%	86%	5%	0%	0%	0%						
	PEAK HR FACTOR		0.913			0.837			0.989			0.000		0.955					
	APP/DEPART	303	/	382	328	/	293	1,234	/	1,190	0	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

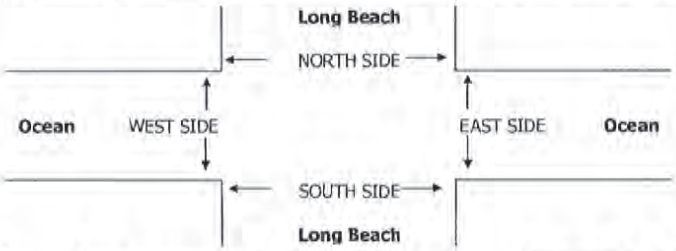
DATE:				
Thu, May 26, 16	LOCATION:	Long Beach	PROJECT #:	SC0972
	NORTH & SOUTH:	Long Beach	LOCATION #:	15
	EAST & WEST:	Ocean	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N ▲ ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Long Beach			SOUTHBOUND Long Beach			EASTBOUND Ocean			WESTBOUND Ocean				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 1.5	ST X	SR 1.5	EL 1	ET 3	ER X	WL X	WT 3	WR 1	TOTAL	NB X	SB 0	EB X	WB X	TTL
AM	7:00 AM	0	0	0	15	0	36	17	86	0	0	391	14	559	0	3	0	0	3
	7:15 AM	0	0	0	14	0	47	20	124	0	0	500	27	732	0	0	2	0	2
	7:30 AM	0	0	0	10	0	48	14	117	0	0	468	20	677	0	1	0	0	1
	7:45 AM	0	0	0	21	0	51	19	108	0	0	528	30	757	0	1	1	0	2
	8:00 AM	0	0	0	16	0	51	24	107	0	0	433	21	652	0	0	0	0	0
	8:15 AM	0	0	0	14	0	44	22	135	0	0	506	38	759	0	1	1	0	2
	8:30 AM	0	0	0	18	0	59	24	114	0	0	450	22	687	0	3	0	0	3
	8:45 AM	0	0	0	17	0	66	37	125	0	0	395	27	667	0	0	1	0	1
	VOLUMES	0	0	0	125	0	402	177	916	0	0	3,671	199	5,490	0	9	5	0	14
	APPROACH %	0%	0%	0%	24%	0%	76%	16%	84%	0%	0%	95%	5%						
	APP/DEPART	0	/	380	527	/	0	1,093	/	1,032	3,870	/	4,078	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	0	0	69	0	205	89	464	0	0	1,917	111	2,855					
	APPROACH %	0%	0%	0%	25%	0%	75%	16%	84%	0%	0%	95%	5%						
	PEAK HR FACTOR		0.000			0.890			0.881			0.909		0.940					
	APP/DEPART	0	/	203	274	/	0	553	/	528	2,028	/	2,124	0					
PM	4:00 PM	0	0	0	30	0	51	32	261	0	0	217	22	613	0	8	1	0	9
	4:15 PM	0	0	0	30	0	45	34	358	0	0	239	27	733	0	2	1	0	3
	4:30 PM	0	0	0	40	0	44	49	372	0	0	218	27	750	0	6	1	0	7
	4:45 PM	0	0	0	23	0	41	46	371	0	0	193	19	693	0	1	1	0	2
	5:00 PM	0	0	0	42	0	66	55	412	0	0	241	22	838	0	7	1	0	8
	5:15 PM	0	0	0	50	0	61	52	457	0	0	265	27	912	0	9	0	0	9
	5:30 PM	0	0	0	43	0	63	39	348	0	0	212	31	736	0	4	1	0	5
	5:45 PM	0	0	0	30	0	46	30	387	0	0	246	25	764	0	4	1	0	5
	VOLUMES	0	0	0	288	0	417	337	2,966	0	0	1,831	200	6,039	0	41	7	0	48
	APPROACH %	0%	0%	0%	41%	0%	59%	10%	90%	0%	0%	90%	10%						
	APP/DEPART	0	/	571	705	/	0	3,303	/	3,213	2,031	/	2,255	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	0	0	165	0	236	176	1,604	0	0	964	105	3,250					
	APPROACH %	0%	0%	0%	41%	0%	59%	10%	90%	0%	0%	90%	10%						
	PEAK HR FACTOR		0.000			0.903			0.874			0.915		0.891					
	APP/DEPART	0	/	302	401	/	0	1,780	/	1,745	1,069	/	1,203	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & Alondra Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-092
Date: 5/23/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				Alondra Blvd				Alondra Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	3	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	39	78	35	4	67	114	20	0	10	136	12	0	33	166	36	0	750
7:15 AM	41	80	32	1	84	149	27	0	23	205	22	0	39	210	53	1	967
7:30 AM	46	118	64	2	75	214	21	0	33	235	22	0	42	219	70	0	1161
7:45 AM	36	122	46	2	86	207	28	0	28	218	22	0	50	229	73	0	1147
8:00 AM	45	99	32	3	76	157	24	0	44	170	27	0	47	236	69	0	1029
8:15 AM	41	101	15	2	79	124	25	0	29	139	24	0	45	182	66	0	872
8:30 AM	29	81	36	2	70	100	25	1	29	127	21	0	26	141	54	0	742
8:45 AM	40	89	28	1	56	87	23	0	32	137	15	0	28	133	75	0	744
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	317	768	288	17	593	1152	193	1	228	1367	165	0	310	1516	496	1	7412
APPROACH %'s :	22.81%	55.25%	20.72%	1.22%	30.58%	59.41%	9.95%	0.05%	12.95%	77.67%	9.38%	0.00%	13.34%	65.26%	21.35%	0.04%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	168	419	174	8	321	727	100	0	128	828	93	0	178	894	265	1	4304
PEAK HR FACTOR :	0.913	0.859	0.680	0.667	0.933	0.849	0.893	0.000	0.727	0.881	0.861	0.000	0.890	0.947	0.908	0.250	0.927
	0.836				0.894				0.904				0.950				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	3	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	33	111	35	2	63	115	34	0	35	192	44	0	32	157	82	0	935
4:15 PM	39	129	29	5	70	121	21	0	35	210	54	0	46	172	96	1	1028
4:30 PM	29	139	40	3	60	125	39	0	33	217	43	0	52	145	83	0	1008
4:45 PM	35	148	29	0	51	159	28	0	48	233	66	0	38	180	83	0	1098
5:00 PM	31	156	52	0	61	175	36	0	50	229	59	1	38	160	101	1	1150
5:15 PM	31	143	38	0	50	144	15	1	53	284	64	1	42	173	94	0	1133
5:30 PM	25	154	48	6	66	137	33	0	29	239	59	0	41	184	95	0	1116
5:45 PM	31	111	32	3	50	131	28	0	58	251	57	5	42	166	94	1	1060
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	254	1091	303	19	471	1107	234	1	341	1855	446	7	331	1337	728	3	8528
APPROACH %'s :	15.24%	65.45%	18.18%	1.14%	25.98%	61.06%	12.91%	0.06%	12.87%	70.03%	16.84%	0.26%	13.80%	55.73%	30.35%	0.13%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	122	601	167	6	228	615	112	1	180	985	248	2	159	697	373	1	4497
PEAK HR FACTOR :	0.871	0.963	0.803	0.250	0.864	0.879	0.778	0.250	0.849	0.867	0.939	0.500	0.946	0.947	0.923	0.250	0.978
	0.937				0.879				0.880				0.961				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & SR-91 WB Ramps
City: Long Beach
Control: Signalized

Project ID: 18-05723-001
Date: 11/1/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				SR-91 WB Ramps				SR-91 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	3	0	0	0	0	0	0	2	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	106	109	0	0	0	169	90	0	0	0	0	0	50	2	78	0	604
7:15 AM	98	109	0	0	0	184	83	0	0	0	0	0	24	4	67	0	569
7:30 AM	94	111	0	0	0	238	106	0	0	0	0	0	44	7	69	0	669
7:45 AM	111	136	0	0	0	239	135	0	0	0	0	0	63	9	60	0	753
8:00 AM	100	131	0	0	0	209	124	0	0	0	0	0	43	8	49	0	664
8:15 AM	97	107	0	0	0	205	85	0	0	0	0	0	42	8	49	0	593
8:30 AM	84	124	0	0	0	179	73	0	0	0	0	0	37	3	54	0	554
8:45 AM	80	124	0	0	0	174	57	0	0	0	0	0	32	2	62	0	531
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	770	951	0	0	0	1597	753	0	0	0	0	0	335	43	488	0	4937
APPROACH %'s :	44.74%	55.26%	0.00%	0.00%	0.00%	67.96%	32.04%	0.00%					38.68%	4.97%	56.35%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	402	485	0	0	0	891	450	0	0	0	0	0	192	32	227	0	2679
PEAK HR FACTOR :	0.905	0.892	0.000	0.000	0.000	0.932	0.833	0.000	0.000	0.000	0.000	0.000	0.762	0.889	0.822	0.000	0.889
	0.898				0.896								0.854				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	3	0	0	0	0	0	0	2	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	70	186	0	0	0	219	41	0	0	0	0	0	68	1	126	0	711
4:15 PM	75	207	0	0	0	196	37	0	0	0	0	0	69	0	71	0	655
4:30 PM	57	183	0	0	0	228	31	0	0	0	0	0	46	0	81	0	626
4:45 PM	63	175	0	0	0	224	35	0	0	0	0	0	48	0	91	0	636
5:00 PM	73	153	0	0	0	229	35	0	0	0	0	0	58	0	119	0	667
5:15 PM	78	189	0	0	0	252	33	0	0	0	0	0	69	0	115	0	736
5:30 PM	73	168	0	0	0	251	36	0	0	0	0	0	63	0	119	0	710
5:45 PM	68	178	0	0	0	275	28	0	0	0	0	0	66	0	98	0	713
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	557	1439	0	0	0	1874	276	0	0	0	0	0	487	1	820	0	5454
APPROACH %'s :	27.91%	72.09%	0.00%	0.00%	0.00%	87.16%	12.84%	0.00%					37.23%	0.08%	62.69%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	292	688	0	0	0	1007	132	0	0	0	0	0	256	0	451	0	2826
PEAK HR FACTOR :	0.936	0.910	0.000	0.000	0.000	0.915	0.917	0.000	0.000	0.000	0.000	0.000	0.928	0.000	0.947	0.000	0.960
	0.918				0.940								0.961				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & SR-91 EB Ramps
City: Long Beach
Control: Signalized

Project ID: 18-05723-002
Date: 11/1/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				SR-91 EB Ramps				SR-91 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	1.5	0	1.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	196	80	0	55	163	0	0	19	0	52	0	0	0	0	0	565
7:15 AM	0	192	90	0	62	158	0	0	14	0	51	0	0	0	0	0	567
7:30 AM	0	196	67	0	85	192	0	0	12	0	71	0	0	0	0	0	623
7:45 AM	0	236	71	0	69	233	0	0	11	0	64	0	0	0	0	0	684
8:00 AM	0	217	68	0	59	194	0	0	16	1	48	0	0	0	0	0	603
8:15 AM	0	195	61	0	69	177	0	0	7	0	51	0	0	0	0	0	560
8:30 AM	0	189	47	0	42	173	0	0	16	0	67	0	0	0	0	0	534
8:45 AM	0	186	42	0	38	162	0	0	18	0	69	0	0	0	0	0	515
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1607	526	0	479	1452	0	0	113	1	473	0	0	0	0	0	4651
APPROACH %'s :	0.00%	75.34%	24.66%	0.00%	24.81%	75.19%	0.00%	0.00%	19.25%	0.17%	80.58%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	841	296	0	275	777	0	0	53	1	234	0	0	0	0	0	2477
PEAK HR FACTOR :	0.000	0.891	0.822	0.000	0.809	0.834	0.000	0.000	0.828	0.250	0.824	0.000	0.000	0.000	0.000	0.000	0.905
	0.926				0.871				0.867								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	1.5	0	1.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	206	81	0	90	188	0	0	57	16	115	0	0	0	0	0	753
4:15 PM	0	233	88	0	79	194	0	0	37	13	126	0	0	0	0	0	770
4:30 PM	0	199	73	0	83	191	0	0	38	10	140	0	0	0	0	0	734
4:45 PM	0	205	77	0	82	187	0	0	38	11	115	0	0	0	0	0	715
5:00 PM	0	196	90	0	100	195	0	0	33	15	131	0	0	0	0	0	760
5:15 PM	0	241	76	0	94	221	0	0	30	9	131	0	0	0	0	0	802
5:30 PM	0	206	80	0	91	223	0	0	34	13	137	0	0	0	0	0	784
5:45 PM	0	218	74	0	95	242	0	0	36	15	147	0	0	0	0	0	827
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1704	639	0	714	1641	0	0	303	102	1042	0	0	0	0	0	6145
APPROACH %'s :	0.00%	72.73%	27.27%	0.00%	30.32%	69.68%	0.00%	0.00%	20.94%	7.05%	72.01%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	861	320	0	380	881	0	0	133	52	546	0	0	0	0	0	3173
PEAK HR FACTOR :	0.000	0.893	0.889	0.000	0.950	0.910	0.000	0.000	0.924	0.867	0.929	0.000	0.000	0.000	0.000	0.000	0.959
	0.931				0.935				0.923								

National Data & Surveying Services Intersection Turning Movement Count

Location: Atlantic Ave & Artesia Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-043
Date: 5/23/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				Artesia Blvd				Artesia Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	2	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	52	196	28	1	36	107	55	0	40	76	27	4	15	198	52	0	887
7:15 AM	59	181	24	0	40	108	64	0	57	113	45	8	19	202	62	2	984
7:30 AM	63	186	56	0	60	143	85	0	41	146	61	13	22	245	53	1	1175
7:45 AM	62	164	35	2	33	155	120	0	53	96	58	14	16	204	65	2	1079
8:00 AM	60	158	33	3	25	123	79	0	32	85	44	9	25	204	50	3	933
8:15 AM	67	153	26	0	31	154	81	0	45	99	42	9	26	147	51	1	932
8:30 AM	56	161	24	0	20	123	73	0	58	97	43	6	24	175	54	2	916
8:45 AM	50	136	14	0	28	124	48	0	37	81	49	6	23	159	51	1	807
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	469	1335	240	6	273	1037	605	0	363	793	369	69	170	1534	438	12	7713
APPROACH %'s :	22.88%	65.12%	11.71%	0.29%	14.26%	54.15%	31.59%	0.00%	22.77%	49.75%	23.15%	4.33%	7.89%	71.22%	20.33%	0.56%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	244	689	148	5	158	529	348	0	183	440	208	44	82	855	230	8	4171
PEAK HR FACTOR :	0.968	0.926	0.661	0.417	0.658	0.853	0.725	0.000	0.803	0.753	0.852	0.786	0.820	0.872	0.885	0.667	0.887
	0.890				0.840				0.838				0.915				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	2	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	40	168	23	0	64	205	11	0	80	223	54	0	30	85	48	1	1032
4:15 PM	34	125	29	1	55	199	36	0	78	244	38	2	25	85	56	1	1008
4:30 PM	44	143	29	2	81	224	40	0	105	255	48	0	23	94	60	2	1150
4:45 PM	41	151	33	0	78	245	31	0	92	239	59	1	33	79	60	1	1143
5:00 PM	40	172	26	1	73	235	30	0	83	224	52	0	32	98	58	1	1125
5:15 PM	32	174	21	0	68	219	33	0	85	244	55	1	25	108	57	0	1122
5:30 PM	41	148	31	0	74	244	38	0	53	233	61	4	31	102	51	5	1116
5:45 PM	49	146	34	1	72	197	29	0	40	260	73	2	28	93	40	2	1066
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	321	1227	226	5	565	1768	248	0	616	1922	440	10	227	744	430	13	8762
APPROACH %'s :	18.04%	68.97%	12.70%	0.28%	21.89%	68.50%	9.61%	0.00%	20.62%	64.32%	14.73%	0.33%	16.05%	52.62%	30.41%	0.92%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	157	640	109	3	300	923	134	0	365	962	214	2	113	379	235	4	4540
PEAK HR FACTOR :	0.892	0.920	0.826	0.375	0.926	0.942	0.838	0.000	0.869	0.943	0.907	0.500	0.856	0.877	0.979	0.500	0.987
	0.951				0.958				0.945				0.962				

National Data & Surveying Services Intersection Turning Movement Count

Location: Atlantic Ave & South St
City: Long Beach
Control: Signalized

Project ID: 18-05307-042
Date: 5/23/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				South St				South St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	6	93	9	0	28	141	10	0	8	39	7	0	27	40	27	0	435
7:15 AM	4	91	19	0	24	136	17	0	17	46	13	0	26	58	22	0	473
7:30 AM	11	110	20	1	43	203	16	0	23	64	10	0	30	79	24	0	634
7:45 AM	10	112	17	0	44	208	28	0	17	41	8	0	37	57	30	0	609
8:00 AM	11	105	25	0	36	160	10	0	11	46	13	0	29	61	32	0	539
8:15 AM	8	100	17	0	29	154	5	0	19	50	17	0	27	54	26	0	506
8:30 AM	13	85	17	0	28	139	20	0	17	54	16	0	31	45	28	0	493
8:45 AM	7	86	17	0	35	111	10	0	12	44	12	0	32	52	20	0	438
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	70	782	141	1	267	1252	116	0	124	384	96	0	239	446	209	0	4127
APPROACH %'s :	7.04%	78.67%	14.19%	0.10%	16.33%	76.57%	7.09%	0.00%	20.53%	63.58%	15.89%	0.00%	26.73%	49.89%	23.38%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	40	427	79	1	152	725	59	0	70	201	48	0	123	251	112	0	2288
PEAK HR FACTOR :	0.909	0.953	0.790	0.250	0.864	0.871	0.527	0.000	0.761	0.785	0.706	0.000	0.831	0.794	0.875	0.000	0.902
	0.963				0.836				0.822				0.914				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	147	30	0	52	129	18	0	19	68	11	0	24	56	43	0	609
4:15 PM	9	131	25	0	57	103	19	0	20	72	12	1	27	54	25	0	555
4:30 PM	15	158	36	0	56	138	14	0	16	75	11	0	25	63	28	0	635
4:45 PM	15	155	40	0	45	118	18	1	15	90	15	0	28	63	41	0	644
5:00 PM	15	186	40	0	73	139	26	0	9	81	7	0	26	63	26	0	691
5:15 PM	16	210	49	0	64	114	13	0	15	82	12	0	26	61	35	0	697
5:30 PM	22	169	35	0	70	127	20	0	22	91	6	0	25	72	32	0	691
5:45 PM	18	151	36	0	48	129	21	0	25	88	10	0	35	56	44	0	661
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	122	1307	291	0	465	997	149	1	141	647	84	1	216	488	274	0	5183
APPROACH %'s :	7.09%	75.99%	16.92%	0.00%	28.85%	61.85%	9.24%	0.06%	16.15%	74.11%	9.62%	0.11%	22.09%	49.90%	28.02%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	71	716	160	0	255	509	80	0	71	342	35	0	112	252	137	0	2740
PEAK HR FACTOR :	0.807	0.852	0.816	0.000	0.873	0.915	0.769	0.000	0.710	0.940	0.729	0.000	0.800	0.875	0.778	0.000	0.983
	0.861				0.887				0.911				0.928				

National Data & Surveying Services Intersection Turning Movement Count

Location: Atlantic Ave & Del Amo Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-041
Date: 5/23/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	28	44	17	0	24	103	30	0	12	100	19	4	10	324	12	0	727
7:15 AM	43	58	19	0	38	131	61	0	18	144	25	2	13	354	12	0	918
7:30 AM	43	70	22	0	46	175	54	0	20	161	40	0	13	373	23	0	1040
7:45 AM	46	86	17	0	46	192	70	0	23	147	39	1	17	313	33	0	1030
8:00 AM	35	86	13	0	23	177	40	1	16	139	44	1	28	343	24	0	970
8:15 AM	36	78	8	0	34	162	41	1	26	164	43	2	17	269	20	0	901
8:30 AM	39	77	7	0	34	140	54	0	16	175	45	2	26	253	22	0	890
8:45 AM	44	80	8	0	25	143	37	1	20	148	49	3	27	241	25	0	851
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	314	579	111	0	270	1223	387	3	151	1178	304	15	151	2470	171	0	7327
APPROACH %'s :	31.27%	57.67%	11.06%	0.00%	14.34%	64.95%	20.55%	0.16%	9.16%	71.48%	18.45%	0.91%	5.41%	88.47%	6.12%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	167	300	71	0	153	675	225	1	77	591	148	4	71	1383	92	0	3958
PEAK HR FACTOR :	0.908	0.872	0.807	0.000	0.832	0.879	0.804	0.250	0.837	0.918	0.841	0.500	0.634	0.927	0.697	0.000	0.951
	0.903				0.856				0.928				0.945				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	51	148	17	0	27	120	32	1	38	325	61	1	24	167	18	0	1030
4:15 PM	43	142	34	1	26	92	30	3	34	371	72	2	39	167	16	0	1072
4:30 PM	44	165	32	1	25	133	36	1	29	339	67	1	24	151	32	0	1080
4:45 PM	46	159	30	0	29	99	34	0	35	374	68	1	25	161	30	2	1093
5:00 PM	52	207	41	0	27	129	30	1	36	353	58	1	23	141	30	0	1129
5:15 PM	53	196	32	0	27	116	27	0	37	404	81	3	33	177	41	0	1227
5:30 PM	59	207	39	0	27	115	24	0	39	356	66	3	28	182	35	1	1181
5:45 PM	53	173	32	0	25	111	37	1	44	391	54	2	18	183	32	1	1157
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	401	1397	257	2	213	915	250	7	292	2913	527	14	214	1329	234	4	8969
APPROACH %'s :	19.49%	67.91%	12.49%	0.10%	15.38%	66.06%	18.05%	0.51%	7.79%	77.76%	14.07%	0.37%	12.02%	74.62%	13.14%	0.22%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	217	783	144	0	106	471	118	2	156	1504	259	9	102	683	138	2	4694
PEAK HR FACTOR :	0.919	0.946	0.878	0.000	0.981	0.913	0.797	0.500	0.886	0.931	0.799	0.750	0.773	0.933	0.841	0.500	0.956
	0.938				0.932				0.918				0.921				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & 33rd St
City: Long Beach
Control: Signalized

Project ID: 18-05723-003
Date: 11/1/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				33rd St				33rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	94	13	0	1	171	1	0	0	1	4	0	5	1	10	0	305
7:15 AM	5	129	15	0	8	229	1	0	0	1	8	0	6	1	6	0	409
7:30 AM	11	123	11	1	5	253	1	0	0	1	4	0	11	3	4	0	428
7:45 AM	1	193	23	0	12	246	0	0	2	1	4	0	4	4	11	0	501
8:00 AM	8	224	22	2	10	210	2	0	2	1	8	0	10	1	21	0	521
8:15 AM	2	178	33	1	18	235	1	0	0	2	2	0	14	2	29	0	517
8:30 AM	4	191	25	1	15	223	4	0	1	4	3	0	8	5	19	0	503
8:45 AM	8	200	33	1	16	206	1	0	1	2	3	0	26	3	28	0	528
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	43	1332	175	6	85	1773	11	0	6	13	36	0	84	20	128	0	3712
APPROACH %'s :	2.76%	85.60%	11.25%	0.39%	4.55%	94.86%	0.59%	0.00%	10.91%	23.64%	65.45%	0.00%	36.21%	8.62%	55.17%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	22	793	113	5	59	874	8	0	4	9	16	0	58	11	97	0	2069
PEAK HR FACTOR :	0.688	0.885	0.856	0.625	0.819	0.930	0.500	0.000	0.500	0.563	0.500	0.000	0.558	0.550	0.836	0.000	0.980
	0.911				0.926				0.659				0.728				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	288	63	2	18	178	0	0	3	3	6	0	26	9	49	0	651
4:15 PM	3	303	45	2	18	203	5	0	4	3	5	0	35	3	34	0	663
4:30 PM	7	263	52	0	18	187	3	0	3	2	11	0	24	3	31	0	604
4:45 PM	9	311	65	0	15	170	2	0	5	3	9	0	32	1	40	0	662
5:00 PM	4	291	61	2	25	198	2	0	1	2	6	0	26	5	43	0	666
5:15 PM	6	311	72	0	20	184	6	0	4	1	8	0	36	6	43	0	697
5:30 PM	5	309	70	0	19	187	3	0	0	3	3	0	24	4	31	0	658
5:45 PM	12	325	48	0	18	149	3	0	4	3	4	0	25	2	33	0	626
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	52	2401	476	6	151	1456	24	0	24	20	52	0	228	33	304	0	5227
APPROACH %'s :	1.77%	81.81%	16.22%	0.20%	9.26%	89.27%	1.47%	0.00%	25.00%	20.83%	54.17%	0.00%	40.35%	5.84%	53.81%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	24	1222	268	2	79	739	13	0	10	9	26	0	118	16	157	0	2683
PEAK HR FACTOR :	0.667	0.982	0.931	0.250	0.790	0.933	0.542	0.000	0.500	0.750	0.722	0.000	0.819	0.667	0.913	0.000	0.962
	0.974				0.923				0.662				0.856				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & I-405 WB Ramp
City: Long Beach
Control: 1-Way Yield (WB)

Project ID: 18-05723-103
Date: 11/1/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				I-405 WB Ramps				I-405 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	0	2	0	0	0	0	1	0	0	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	92	43	0	0	169	0	0	0	0	59	0	0	0	29	0	392
7:15 AM	0	108	68	0	0	238	0	0	0	0	55	0	0	0	31	0	500
7:30 AM	0	121	70	0	0	278	0	0	0	0	58	0	0	0	35	0	562
7:45 AM	0	166	53	0	0	266	0	0	0	0	59	0	0	0	39	0	583
8:00 AM	0	186	50	0	0	227	0	0	0	0	81	0	0	0	67	0	611
8:15 AM	0	174	47	0	0	251	0	0	0	0	72	0	0	0	53	0	597
8:30 AM	0	178	53	0	0	227	0	0	0	0	48	0	0	0	33	0	539
8:45 AM	0	186	46	0	0	236	0	0	0	0	57	0	0	0	67	0	592
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1211	430	0	0	1892	0	0	0	0	489	0	0	0	354	0	4376
APPROACH %'s :	0.00%	73.80%	26.20%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	647	220	0	0	1022	0	0	0	0	270	0	0	0	194	0	2353
PEAK HR FACTOR :	0.000	0.870	0.786	0.000	0.000	0.919	0.000	0.000	0.000	0.000	0.833	0.000	0.000	0.000	0.724	0.000	0.963
	0.918				0.919				0.833				0.724				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	0	2	0	0	0	0	1	0	0	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	236	65	0	0	215	0	0	0	0	64	0	0	0	120	0	700
4:15 PM	0	257	67	0	0	239	0	0	0	0	76	0	0	0	103	0	742
4:30 PM	0	231	76	0	0	232	0	0	0	0	75	0	0	0	89	0	703
4:45 PM	0	272	82	0	0	212	0	0	0	0	50	0	0	0	108	0	724
5:00 PM	0	259	89	0	0	220	0	0	0	0	60	0	0	0	106	0	734
5:15 PM	0	286	60	0	0	240	0	0	0	0	68	0	0	0	105	0	759
5:30 PM	0	286	58	0	0	228	0	0	0	0	66	0	0	0	103	0	741
5:45 PM	0	277	54	0	0	163	0	0	0	0	62	0	0	0	99	0	655
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2104	551	0	0	1749	0	0	0	0	521	0	0	0	833	0	5758
APPROACH %'s :	0.00%	79.25%	20.75%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1103	289	0	0	900	0	0	0	0	244	0	0	0	422	0	2958
PEAK HR FACTOR :	0.000	0.964	0.812	0.000	0.000	0.938	0.000	0.000	0.000	0.000	0.897	0.000	0.000	0.000	0.977	0.000	0.974
	0.983				0.938				0.897				0.977				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & I-405 EB Ramps
City: Long Beach
Control: Signalized

Project ID: 18-05723-004
Date: 11/1/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				I-405 EB Ramps				I-405 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	2	1	0	1	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	121	58	0	0	145	86	0	26	0	73	0	0	0	0	0	509
7:15 AM	0	133	81	0	0	210	86	0	42	0	91	0	0	0	0	0	643
7:30 AM	0	150	104	0	1	240	90	0	30	0	78	0	0	0	0	0	693
7:45 AM	0	175	84	0	0	233	69	0	53	0	91	0	0	0	0	0	705
8:00 AM	0	188	64	0	0	233	78	0	41	0	82	0	0	0	0	0	686
8:15 AM	0	177	64	0	0	231	94	0	43	2	90	0	0	0	0	0	701
8:30 AM	0	170	63	0	0	213	73	0	50	1	97	0	0	0	0	0	667
8:45 AM	0	174	51	0	0	219	57	0	44	0	81	0	0	0	0	0	626
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1288	569	0	1	1724	633	0	329	3	683	0	0	0	0	0	5230
APPROACH %'s :	0.00%	69.36%	30.64%	0.00%	0.04%	73.11%	26.84%	0.00%	32.41%	0.30%	67.29%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	690	316	0	1	937	331	0	167	2	341	0	0	0	0	0	2785
PEAK HR FACTOR :	0.000	0.918	0.760	0.000	0.250	0.976	0.880	0.000	0.788	0.250	0.937	0.000	0.000	0.000	0.000	0.000	0.988
	0.971				0.958				0.885								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	2	1	0	1	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	257	55	0	0	233	38	0	59	1	62	0	0	0	0	0	705
4:15 PM	0	263	37	0	0	246	59	0	61	0	57	0	0	0	0	0	723
4:30 PM	0	259	62	0	0	256	55	0	49	0	51	0	0	0	0	0	732
4:45 PM	0	278	58	0	1	199	72	0	70	0	76	0	0	0	0	0	754
5:00 PM	0	281	54	0	1	214	58	0	60	0	76	0	0	0	0	0	744
5:15 PM	0	290	63	0	0	242	51	0	67	0	58	0	0	0	0	0	771
5:30 PM	0	261	55	0	0	238	61	0	68	0	57	0	0	0	0	0	740
5:45 PM	0	263	66	0	0	199	39	0	78	0	51	0	0	0	0	0	696
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2152	450	0	2	1827	433	0	512	1	488	0	0	0	0	0	5865
APPROACH %'s :	0.00%	82.71%	17.29%	0.00%	0.09%	80.77%	19.14%	0.00%	51.15%	0.10%	48.75%	0.00%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1110	230	0	2	893	242	0	265	0	267	0	0	0	0	0	3009
PEAK HR FACTOR :	0.000	0.957	0.913	0.000	0.500	0.923	0.840	0.000	0.946	0.000	0.878	0.000	0.000	0.000	0.000	0.000	0.976
	0.949				0.951				0.911								

National Data & Surveying Services Intersection Turning Movement Count

Location: Atlantic Ave & Willow St
City: Long Beach
Control: Signalized

Project ID: 18-05307-040
Date: 5/23/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	2	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	27	129	15	0	9	91	15	0	22	131	8	0	20	161	19	0	647
7:15 AM	20	142	20	0	14	143	18	0	32	216	16	0	26	242	33	0	922
7:30 AM	31	198	23	0	31	158	17	0	23	226	24	0	29	225	38	0	1023
7:45 AM	40	170	37	0	37	117	22	0	50	239	18	0	28	282	59	0	1099
8:00 AM	22	156	25	0	15	147	17	0	30	213	21	0	22	210	36	0	914
8:15 AM	16	133	19	0	22	108	23	1	39	258	20	0	15	220	39	0	913
8:30 AM	28	147	23	0	23	140	24	0	36	175	15	0	15	179	43	1	849
8:45 AM	15	149	18	0	15	136	19	1	37	196	12	0	19	201	42	3	863
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	199	1224	180	0	166	1040	155	2	269	1654	134	0	174	1720	309	4	7230
APPROACH %'s :	12.41%	76.36%	11.23%	0.00%	12.18%	76.30%	11.37%	0.15%	13.08%	80.41%	6.51%	0.00%	7.88%	77.93%	14.00%	0.18%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	113	666	105	0	97	565	74	0	135	894	79	0	105	959	166	0	3958
PEAK HR FACTOR :	0.706	0.841	0.709	0.000	0.655	0.894	0.841	0.000	0.675	0.935	0.823	0.000	0.905	0.850	0.703	0.000	0.900
	0.877				0.893				0.902				0.833				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	2	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	35	130	30	0	49	151	45	0	32	351	27	0	37	281	36	0	1204
4:15 PM	17	153	43	0	39	171	39	0	40	296	27	0	46	225	25	0	1121
4:30 PM	22	142	24	0	46	148	34	0	33	361	31	0	24	278	20	0	1163
4:45 PM	13	131	29	0	40	173	38	0	26	279	20	0	31	226	24	1	1031
5:00 PM	26	144	40	0	46	169	40	0	18	394	24	0	18	303	25	1	1248
5:15 PM	19	139	37	0	35	183	30	0	35	335	25	0	34	264	20	0	1156
5:30 PM	27	138	35	0	40	140	30	0	28	336	27	0	29	280	18	0	1128
5:45 PM	24	111	28	0	23	181	36	0	33	257	25	0	28	197	22	0	965
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	183	1088	266	0	318	1316	292	0	245	2609	206	0	247	2054	190	2	9016
APPROACH %'s :	11.91%	70.79%	17.31%	0.00%	16.51%	68.33%	15.16%	0.00%	8.01%	85.26%	6.73%	0.00%	9.91%	82.39%	7.62%	0.08%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	80	556	130	0	167	673	142	0	112	1369	100	0	107	1071	89	2	4598
PEAK HR FACTOR :	0.769	0.965	0.813	0.000	0.908	0.919	0.888	0.000	0.800	0.869	0.806	0.000	0.787	0.884	0.890	0.500	0.921
	0.912				0.963				0.907				0.914				

National Data & Surveying Services Intersection Turning Movement Count

Location: Atlantic Ave & Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 18-05307-039
Date: 5/23/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				Pacific Coast Hwy				Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	16	65	22	0	15	82	12	0	11	145	24	0	21	200	19	0	632
7:15 AM	14	106	28	0	15	150	9	0	17	153	45	0	51	253	29	0	870
7:30 AM	16	169	62	0	11	208	18	0	22	160	74	0	54	244	31	0	1069
7:45 AM	23	191	78	0	11	173	24	0	35	181	56	0	45	316	27	0	1160
8:00 AM	16	106	32	0	13	129	21	0	24	195	17	0	31	288	22	0	894
8:15 AM	21	102	24	0	12	129	21	0	12	173	20	0	33	246	20	0	813
8:30 AM	14	97	26	0	17	117	17	0	14	193	24	0	23	267	27	0	836
8:45 AM	21	110	16	0	16	128	25	0	24	179	23	0	27	224	25	0	818
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	141	946	288	0	110	1116	147	0	159	1379	283	0	285	2038	200	0	7092
APPROACH %'s :	10.25%	68.80%	20.95%	0.00%	8.01%	81.28%	10.71%	0.00%	8.73%	75.73%	15.54%	0.00%	11.30%	80.78%	7.93%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	69	572	200	0	50	660	72	0	98	689	192	0	181	1101	109	0	3993
PEAK HR FACTOR :	0.750	0.749	0.641	0.000	0.833	0.793	0.750	0.000	0.700	0.883	0.649	0.000	0.838	0.871	0.879	0.000	0.861
	0.720				0.825				0.900				0.896				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	10	159	41	0	19	156	16	0	24	259	22	0	34	209	23	0	972
4:15 PM	12	138	30	0	19	135	24	0	17	306	28	0	25	208	25	0	967
4:30 PM	15	148	41	0	27	132	19	0	21	338	24	0	26	178	19	0	988
4:45 PM	20	151	47	0	16	138	21	0	19	372	19	0	23	191	17	0	1034
5:00 PM	18	159	45	0	27	132	22	0	18	373	23	0	30	221	16	0	1084
5:15 PM	15	145	43	0	23	141	17	0	19	310	28	0	34	201	20	0	996
5:30 PM	15	145	42	0	20	142	19	0	25	303	27	0	24	196	23	0	981
5:45 PM	11	103	37	0	19	147	13	0	20	278	25	0	33	187	19	0	892
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	116	1148	326	0	170	1123	151	0	163	2539	196	0	229	1591	162	0	7914
APPROACH %'s :	7.30%	72.20%	20.50%	0.00%	11.77%	77.77%	10.46%	0.00%	5.62%	87.61%	6.76%	0.00%	11.55%	80.27%	8.17%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	68	603	176	0	93	543	79	0	77	1393	94	0	113	791	72	0	4102
PEAK HR FACTOR :	0.850	0.948	0.936	0.000	0.861	0.963	0.898	0.000	0.917	0.934	0.839	0.000	0.831	0.895	0.900	0.000	0.946
	0.954				0.988				0.944				0.914				

National Data & Surveying Services Intersection Turning Movement Count

Location: Atlantic Ave & Anaheim St
City: Long Beach
Control: Signalized

Project ID: 18-05307-038
Date: 5/23/2018

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				Anaheim St				Anaheim St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	11	62	7	0	12	45	10	0	23	134	11	0	27	208	16	0	566
7:15 AM	16	75	11	0	19	90	16	0	20	153	10	0	21	242	33	0	706
7:30 AM	16	132	14	0	25	105	20	0	32	141	18	0	29	287	48	0	867
7:45 AM	22	109	12	0	37	135	28	0	38	182	15	0	42	271	32	0	923
8:00 AM	12	96	12	0	27	135	14	0	33	165	24	0	26	261	10	0	815
8:15 AM	10	80	7	0	21	120	16	0	21	148	30	0	30	233	19	0	735
8:30 AM	15	91	12	0	18	106	21	0	30	139	29	0	21	192	23	0	697
8:45 AM	14	79	14	0	21	125	19	0	29	170	20	0	32	204	18	0	745
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	116	724	89	0	180	861	144	0	226	1232	157	0	228	1898	199	0	6054
APPROACH %'s :	12.49%	77.93%	9.58%	0.00%	15.19%	72.66%	12.15%	0.00%	13.99%	76.28%	9.72%	0.00%	9.81%	81.63%	8.56%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	60	417	45	0	110	495	78	0	124	636	87	0	127	1052	109	0	3340
PEAK HR FACTOR :	0.682	0.790	0.804	0.000	0.743	0.917	0.696	0.000	0.816	0.874	0.725	0.000	0.756	0.916	0.568	0.000	0.905
	0.806				0.854				0.901				0.885				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	116	18	0	23	142	24	0	30	304	25	0	26	176	26	0	924
4:15 PM	16	116	26	0	26	138	20	0	48	297	20	0	29	207	19	0	962
4:30 PM	20	125	31	0	24	132	15	0	45	298	23	1	22	177	24	0	937
4:45 PM	14	120	28	0	24	130	20	0	42	311	19	0	24	200	14	0	946
5:00 PM	15	140	16	0	22	118	20	0	45	275	21	0	25	184	34	0	915
5:15 PM	9	145	33	0	22	130	18	0	32	318	12	0	32	183	27	0	961
5:30 PM	15	122	25	0	24	127	17	0	41	307	28	0	25	171	20	0	922
5:45 PM	13	115	21	0	30	139	15	0	25	273	17	0	31	201	24	0	904
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	116	999	198	0	195	1056	149	0	308	2383	165	1	214	1499	188	0	7471
APPROACH %'s :	8.83%	76.09%	15.08%	0.00%	13.93%	75.43%	10.64%	0.00%	10.78%	83.41%	5.78%	0.04%	11.26%	78.85%	9.89%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	64	477	103	0	97	542	79	0	165	1210	87	1	101	760	83	0	3769
PEAK HR FACTOR :	0.800	0.954	0.831	0.000	0.933	0.954	0.823	0.000	0.859	0.973	0.870	0.250	0.871	0.918	0.798	0.000	0.979
	0.915				0.950				0.983				0.925				

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Atlantic	LOCATION #:	22
	EAST & WEST:	7th	CONTROL:	SIGNAL

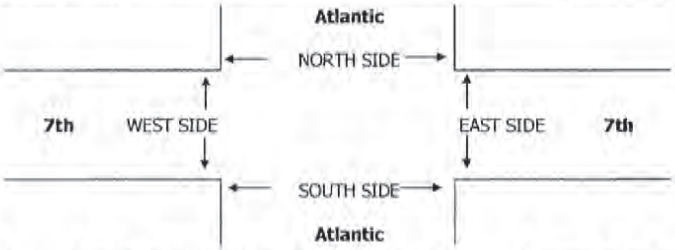
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Atlantic			SOUTHBOUND Atlantic			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL X	ET X	ER X	WL 1	WT 2	WR 0	TOTAL	NB 0	SB X	EB 0	WB 0	TTL
AM	7:00 AM	10	57	22	12	49	13	0	0	0	14	289	22	488	0	0	0	0	0
	7:15 AM	24	61	24	22	53	10	0	0	0	8	321	19	542	0	0	0	0	0
	7:30 AM	29	115	32	14	63	20	0	0	0	21	319	37	650	0	0	0	0	0
	7:45 AM	35	82	34	36	76	27	0	0	0	17	274	25	606	0	0	0	0	0
	8:00 AM	31	81	39	30	65	18	0	0	0	22	282	22	590	0	0	0	0	0
	8:15 AM	18	57	23	27	67	21	0	0	0	39	284	38	574	0	0	0	0	0
	8:30 AM	15	71	22	16	85	14	0	0	0	28	259	27	537	0	0	0	0	0
	8:45 AM	15	67	30	29	69	17	0	0	0	21	275	41	564	0	0	0	0	0
	VOLUMES	177	591	226	186	527	140	0	0	0	170	2,303	231	4,551	0	0	0	0	0
	APPROACH %	18%	59%	23%	22%	62%	16%	0%	0%	0%	6%	85%	9%						
	APP/DEPART	994	/	822	853	/	697	0	/	412	2,704	/	2,620	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	113	335	128	107	271	86	0	0	0	99	1,159	122	2,420					
	APPROACH %	20%	58%	22%	23%	58%	19%	0%	0%	0%	7%	84%	9%						
	PEAK HR FACTOR		0.818			0.835			0.000			0.915		0.931					
	APP/DEPART	576	/	457	464	/	370	0	/	235	1,380	/	1,358	0					
PM	4:00 PM	15	81	88	40	90	19	0	0	1	24	193	27	578	0	0	0	0	0
	4:15 PM	21	69	88	30	90	28	0	0	0	26	165	29	546	0	0	0	0	0
	4:30 PM	13	85	96	32	88	19	0	0	0	24	209	28	594	0	0	0	0	0
	4:45 PM	15	86	113	15	95	16	0	0	0	22	163	21	546	0	0	0	0	0
	5:00 PM	11	100	118	22	78	12	0	0	0	18	148	12	519	0	0	0	0	0
	5:15 PM	16	86	137	25	95	16	0	0	0	16	174	16	581	0	0	0	0	0
	5:30 PM	18	106	86	19	69	18	0	0	0	22	146	28	512	0	0	0	0	0
	5:45 PM	28	84	123	19	81	24	0	0	0	26	187	21	593	0	0	0	0	0
	VOLUMES	137	697	849	202	686	152	0	0	1	178	1,385	182	4,469	0	0	0	0	0
	APPROACH %	8%	41%	50%	19%	66%	15%	0%	0%	100%	10%	79%	10%						
	APP/DEPART	1,683	/	879	1,040	/	865	1	/	1,051	1,745	/	1,674	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	64	321	385	117	363	82	0	0	1	96	730	105	2,264					
	APPROACH %	8%	42%	50%	21%	65%	15%	0%	0%	100%	10%	78%	11%						
	PEAK HR FACTOR		0.900			0.943			0.250			0.892		0.953					
	APP/DEPART	770	/	426	562	/	460	1	/	502	931	/	876	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	1	0	1	0	2	1	0	1	0	2	0	0	0	0	0
	TOTAL	1	0	1	0	2	1	0	1	0	2	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

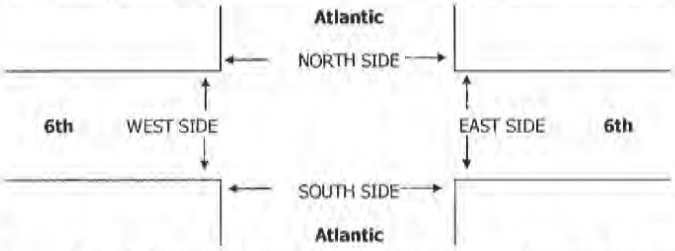
DATE:				
Wed, May 25, 16	LOCATION:	Long Beach	PROJECT #:	SC0972
	NORTH & SOUTH:	Atlantic	LOCATION #:	23
	EAST & WEST:	6th	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Atlantic			SOUTHBOUND Atlantic			EASTBOUND 6th			WESTBOUND 6th				U-TURNS				
	LANES:	NL X	NT 2	NR 0	SL 1	ST 2	SR X	EL 1	ET 2	ER 0	WL 1	WT X	WR 1	TOTAL	NB X	SB X	EB X	WB 0	TTL
AM	7:00 AM	0	61	3	6	55	0	25	63	11	0	0	4	228	0	0	0	0	0
	7:15 AM	0	61	4	8	53	0	28	89	10	1	0	15	269	0	0	0	0	0
	7:30 AM	0	85	8	8	72	0	40	105	16	4	0	6	344	0	0	0	1	1
	7:45 AM	0	88	13	20	89	1	54	98	22	9	0	12	406	0	0	0	0	0
	8:00 AM	0	86	7	11	74	0	66	93	18	5	0	9	369	0	0	0	0	0
	8:15 AM	0	82	6	6	90	0	39	96	14	3	0	6	342	0	0	0	0	0
	8:30 AM	0	86	5	11	89	0	49	90	16	0	0	3	349	0	0	0	0	0
	8:45 AM	0	60	0	7	89	0	39	86	11	2	0	3	297	0	0	0	0	0
	VOLUMES	0	609	46	77	611	1	340	720	118	24	0	58	2,604	0	0	0	1	1
	APPROACH %	0%	93%	7%	11%	89%	0%	29%	61%	10%	29%	0%	71%						
	APP/DEPART	655	/	1,007	689	/	752	1,178	/	844	82	/	1	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	342	31	48	342	1	208	377	70	17	0	30	1,466					
	APPROACH %	0%	92%	8%	12%	87%	0%	32%	58%	11%	36%	0%	64%						
	PEAK HR FACTOR		0.923			0.889			0.925			0.560		0.903					
	APP/DEPART	373	/	580	391	/	429	655	/	456	47	/	1	0					
PM	4:00 PM	0	72	2	10	99	0	81	161	19	1	0	2	447	0	0	0	0	0
	4:15 PM	0	73	2	3	88	0	111	169	15	0	0	3	464	0	0	0	0	0
	4:30 PM	0	82	3	8	97	0	132	173	33	0	0	2	530	0	0	0	0	0
	4:45 PM	0	86	6	7	86	0	132	198	18	0	0	2	535	0	1	0	0	1
	5:00 PM	0	107	4	4	124	0	171	232	21	1	0	2	666	0	0	0	0	0
	5:15 PM	0	93	1	10	113	0	137	217	31	1	0	5	608	0	0	0	0	0
	5:30 PM	0	84	5	10	97	0	114	179	20	0	0	7	516	0	0	0	0	0
	5:45 PM	0	81	7	7	103	0	102	176	20	0	0	2	498	0	0	0	0	0
	VOLUMES	0	678	30	59	807	0	980	1,505	177	3	0	25	4,264	0	1	0	0	1
	APPROACH %	0%	96%	4%	7%	93%	0%	37%	57%	7%	11%	0%	89%						
	APP/DEPART	708	/	1,684	866	/	987	2,662	/	1,593	28	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	368	14	29	420	0	572	820	103	2	0	11	2,339					
	APPROACH %	0%	96%	4%	6%	94%	0%	38%	55%	7%	15%	0%	85%						
	PEAK HR FACTOR		0.860			0.877			0.881			0.542		0.878					
	APP/DEPART	382	/	952	449	/	525	1,495	/	862	13	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

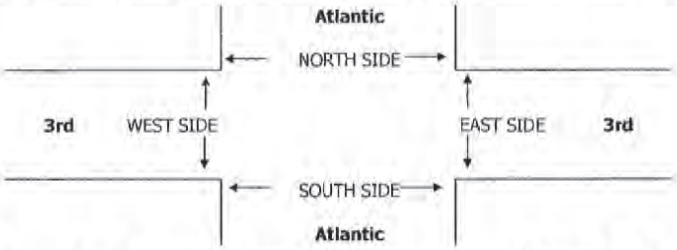
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Wed, May 25, 16	NORTH & SOUTH:	Atlantic	LOCATION #:	26
	EAST & WEST:	3rd	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Atlantic			SOUTHBOUND Atlantic			EASTBOUND 3rd			WESTBOUND 3rd				U-TURNS				
	LANES:	NL 0	NT 2	NR X	SL X	ST 2	SR 0	EL X	ET X	ER X	WL 1	WT 2	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	4	26	0	0	34	15	0	0	0	4	207	6	296	0	0	0	0	0
	7:15 AM	9	32	0	0	42	12	0	0	0	2	235	18	350	0	0	0	0	0
	7:30 AM	7	27	0	0	56	15	0	0	0	3	261	17	386	0	0	0	0	0
	7:45 AM	3	36	0	0	68	22	0	0	0	8	244	14	395	0	0	0	0	0
	8:00 AM	5	32	0	0	57	14	0	0	0	10	250	17	385	0	0	0	0	0
	8:15 AM	8	38	0	0	58	12	0	0	0	7	243	17	383	0	0	0	0	0
	8:30 AM	5	33	0	0	54	18	0	0	0	1	171	13	295	0	0	0	0	0
	8:45 AM	6	37	0	0	52	13	0	0	0	10	178	10	306	0	0	0	0	0
	VOLUMES	47	261	0	0	421	121	0	0	0	45	1,789	112	2,796	0	0	0	0	0
	APPROACH %	15%	85%	0%	0%	78%	22%	0%	0%	0%	2%	92%	6%						
	APP/DEPART	308	/	373	542	/	466	0	/	0	1,946	/	1,957	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	23	133	0	0	239	63	0	0	0	28	998	65	1,549					
	APPROACH %	15%	85%	0%	0%	79%	21%	0%	0%	0%	3%	91%	6%						
	PEAK HR FACTOR		0.848			0.839			0.000			0.971		0.980					
	APP/DEPART	156	/	198	302	/	267	0	/	0	1,091	/	1,084	0					
PM	4:00 PM	9	45	0	0	54	20	0	0	0	7	87	10	232	0	0	0	0	0
	4:15 PM	10	46	0	0	69	14	0	0	0	6	76	7	228	0	0	0	0	0
	4:30 PM	10	58	0	0	75	12	0	0	0	6	92	10	263	0	0	0	0	0
	4:45 PM	5	60	0	0	76	10	0	0	0	5	94	9	259	0	0	0	0	0
	5:00 PM	5	51	0	0	61	13	0	0	0	6	76	12	224	0	0	0	0	0
	5:15 PM	9	54	0	0	75	21	0	0	0	4	70	8	241	0	0	0	0	0
	5:30 PM	6	44	0	0	61	12	0	0	0	7	77	11	218	0	0	0	0	0
	5:45 PM	15	46	0	0	59	18	0	0	0	6	79	11	234	1	0	0	0	1
	VOLUMES	69	404	0	0	530	120	0	0	0	47	651	78	1,899	1	0	0	0	1
	APPROACH %	15%	85%	0%	0%	82%	18%	0%	0%	0%	6%	84%	10%						
	APP/DEPART	473	/	482	650	/	578	0	/	0	776	/	839	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	29	223	0	0	287	56	0	0	0	21	332	39	987					
	APPROACH %	12%	88%	0%	0%	84%	16%	0%	0%	0%	5%	85%	10%						
	PEAK HR FACTOR		0.926			0.893			0.000			0.907		0.938					
	APP/DEPART	252	/	262	343	/	308	0	/	0	392	/	417	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

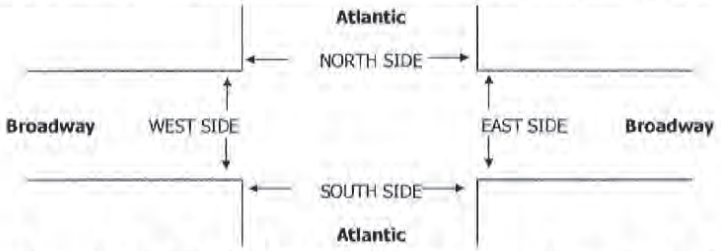
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Wed, May 25, 16	NORTH & SOUTH:	Atlantic	LOCATION #:	5
	EAST & WEST:	Broadway	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Atlantic			SOUTHBOUND Atlantic			EASTBOUND Broadway			WESTBOUND Broadway				U-TURNS				
	LANES:	NL X	NT 2	NR 0	SL 0	ST 2	SR X	EL 1	ET 2	ER 0	WL X	WT X	WR X	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	27	4	8	33	0	3	59	6	0	0	0	140	0	0	0	0	0
	7:15 AM	0	32	8	3	37	0	5	67	2	0	0	0	154	0	0	0	0	0
	7:30 AM	0	37	7	9	47	0	1	57	7	0	0	0	165	0	0	0	0	0
	7:45 AM	0	33	5	13	68	0	9	62	7	0	0	0	197	0	0	0	0	0
	8:00 AM	0	33	9	14	56	0	4	73	11	0	0	0	200	0	0	0	0	0
	8:15 AM	0	35	8	16	50	0	4	60	5	0	0	0	178	0	0	0	0	0
	8:30 AM	0	34	7	11	41	0	5	67	8	0	0	0	173	0	0	0	0	0
	8:45 AM	0	37	13	10	52	0	6	67	11	0	0	0	196	0	0	0	0	0
	VOLUMES	0	268	61	84	384	0	37	512	57	0	0	0	1,403	0	0	0	0	0
	APPROACH %	0%	81%	19%	18%	82%	0%	6%	84%	9%	0%	0%	0%						
	APP/DEPART	329	/	305	468	/	441	606	/	657	0	/	0	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	135	29	54	215	0	22	262	31	0	0	0	748					
	APPROACH %	0%	82%	18%	20%	80%	0%	7%	83%	10%	0%	0%	0%						
	PEAK HR FACTOR		0.953			0.830			0.895			0.000		0.935					
	APP/DEPART	164	/	157	269	/	246	315	/	345	0	/	0	0					
PM	4:00 PM	0	37	17	21	42	0	13	216	13	0	0	0	359	0	0	0	0	0
	4:15 PM	0	50	15	20	51	0	10	238	18	0	0	0	402	0	0	0	0	0
	4:30 PM	0	55	22	14	59	0	11	268	17	0	0	0	446	0	0	0	0	0
	4:45 PM	0	54	17	20	62	0	11	243	13	0	0	0	420	0	0	0	0	0
	5:00 PM	0	56	19	19	63	0	12	283	28	0	0	0	480	0	0	0	0	0
	5:15 PM	0	49	20	16	54	0	7	307	17	0	0	0	470	0	0	0	0	0
	5:30 PM	0	40	17	14	54	0	10	231	15	0	0	0	381	0	0	0	0	0
	5:45 PM	0	45	28	19	48	0	17	248	12	0	0	0	417	0	0	0	0	0
	VOLUMES	0	386	155	143	433	0	91	2,034	133	0	0	0	3,375	0	0	0	0	0
	APPROACH %	0%	71%	29%	25%	75%	0%	4%	90%	6%	0%	0%	0%						
	APP/DEPART	541	/	477	576	/	566	2,258	/	2,332	0	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	214	78	69	238	0	41	1,101	75	0	0	0	1,816					
	APPROACH %	0%	73%	27%	22%	78%	0%	3%	90%	6%	0%	0%	0%						
	PEAK HR FACTOR		0.948			0.936			0.919			0.000		0.946					
	APP/DEPART	292	/	255	307	/	313	1,217	/	1,248	0	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

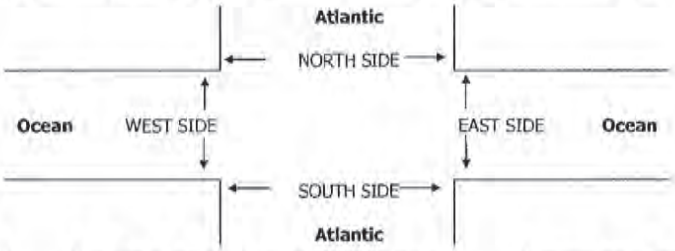
DATE:				
Thu, May 26, 16	LOCATION:	Long Beach	PROJECT #:	SC0972
	NORTH & SOUTH:	Atlantic	LOCATION #:	16
	EAST & WEST:	Ocean	CONTROL:	SIGNAL

NOTES:

AM / PM / MID / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Atlantic			SOUTHBOUND Atlantic			EASTBOUND Ocean			WESTBOUND Ocean				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	3	0	0	6	0	25	12	103	0	0	401	10	560	0	0	2	0	2
	7:15 AM	1	0	0	7	0	29	13	126	1	2	471	8	658	0	0	0	1	1
	7:30 AM	1	1	0	13	1	47	7	123	0	2	439	16	650	0	0	0	2	2
	7:45 AM	3	0	2	13	0	43	6	108	0	0	465	8	648	0	0	0	0	0
	8:00 AM	0	0	1	19	0	33	7	140	0	3	427	8	638	0	1	1	1	3
	8:15 AM	0	0	1	17	1	43	10	131	0	1	466	12	682	0	0	0	1	1
	8:30 AM	0	0	0	14	0	40	17	109	1	3	354	17	555	0	0	2	2	4
	8:45 AM	1	1	1	12	0	31	11	121	1	3	372	15	569	0	0	1	3	4
	VOLUMES	9	2	5	101	2	291	83	961	3	14	3,395	94	4,960	0	1	6	10	17
	APPROACH %	56%	13%	31%	26%	1%	74%	8%	92%	0%	0%	97%	3%						
	APP/DEPART	16	/	174	394	/	9	1,047	/	1,076	3,503	/	3,701	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	4	1	4	62	2	166	30	502	0	6	1,797	44	2,618					
	APPROACH %	44%	11%	44%	27%	1%	72%	6%	94%	0%	0%	97%	2%						
	PEAK HR FACTOR		0.450			0.943			0.905			0.964		0.960					
	APP/DEPART	9	/	75	230	/	4	532	/	571	1,847	/	1,968	0					
PM	4:00 PM	1	0	0	18	0	21	25	245	0	1	163	8	482	0	0	2	1	3
	4:15 PM	0	0	0	23	0	48	24	364	0	4	190	18	671	0	1	2	4	7
	4:30 PM	0	0	0	22	0	31	21	406	0	0	202	11	693	0	0	1	0	1
	4:45 PM	0	0	0	17	0	36	22	372	0	4	176	17	644	0	0	1	2	3
	5:00 PM	0	0	0	29	1	32	32	409	0	0	194	19	716	0	0	2	0	2
	5:15 PM	0	1	0	17	1	38	29	475	0	1	257	20	839	0	0	3	0	3
	5:30 PM	0	1	0	22	1	33	26	340	0	4	199	18	644	0	0	1	2	3
	5:45 PM	0	0	0	22	0	34	26	393	0	5	213	12	705	0	0	0	5	5
	VOLUMES	1	2	0	170	3	273	205	3,004	0	19	1,594	123	5,394	0	1	12	14	27
	APPROACH %	33%	67%	0%	38%	1%	61%	6%	94%	0%	1%	92%	7%						
	APP/DEPART	3	/	319	446	/	8	3,209	/	3,187	1,736	/	1,880	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	2	0	90	3	137	113	1,617	0	10	863	69	2,904					
	APPROACH %	0%	100%	0%	39%	1%	60%	7%	93%	0%	1%	92%	7%						
	PEAK HR FACTOR		0.500			0.927			0.858			0.847		0.865					
	APP/DEPART	2	/	178	230	/	6	1,730	/	1,714	942	/	1,006	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

National Data & Surveying Services Intersection Turning Movement Count

Location: Orange Ave & Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 18-05307-046
Date: 5/23/2018

Total

NS/EW Streets:	Orange Ave				Orange Ave				Wardlow Rd				Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	50	7	0	3	122	14	0	15	41	13	0	15	74	1	0	360
7:15 AM	5	59	6	0	13	153	22	0	9	67	21	0	23	72	7	0	457
7:30 AM	11	80	8	0	5	168	17	0	15	81	20	0	15	85	5	0	510
7:45 AM	9	98	9	0	10	157	24	0	29	92	17	0	20	101	7	0	573
8:00 AM	13	87	10	0	5	147	24	0	28	74	15	0	21	94	6	0	524
8:15 AM	18	74	8	0	6	138	22	0	13	71	13	0	15	94	11	0	483
8:30 AM	9	96	8	0	6	154	15	0	18	74	14	0	18	53	6	0	471
8:45 AM	6	94	8	0	11	160	31	0	20	64	17	0	11	76	7	0	505
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	76	638	64	0	59	1199	169	0	147	564	130	0	138	649	50	0	3883
APPROACH %'s :	9.77%	82.01%	8.23%	0.00%	4.13%	84.02%	11.84%	0.00%	17.48%	67.06%	15.46%	0.00%	16.49%	77.54%	5.97%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	51	339	35	0	26	610	87	0	85	318	65	0	71	374	29	0	2090
PEAK HR FACTOR :	0.708	0.865	0.875	0.000	0.650	0.908	0.906	0.000	0.733	0.864	0.813	0.000	0.845	0.926	0.659	0.000	0.912
	0.916				0.946				0.848				0.926				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	141	14	0	4	139	18	0	31	134	19	0	12	66	8	0	605
4:15 PM	8	157	11	0	6	120	15	0	29	147	20	0	15	84	7	0	619
4:30 PM	18	151	21	0	7	117	13	0	34	145	13	0	10	83	5	0	617
4:45 PM	10	129	15	0	7	115	22	0	49	172	23	0	10	89	9	0	650
5:00 PM	22	154	16	0	10	136	20	0	44	169	24	0	9	91	10	0	705
5:15 PM	14	160	13	0	6	93	16	0	34	176	20	0	15	119	16	0	682
5:30 PM	15	164	17	0	5	123	13	0	34	174	12	0	7	71	7	0	642
5:45 PM	13	153	16	0	4	117	19	0	36	156	14	0	9	91	6	0	634
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	119	1209	123	0	49	960	136	0	291	1273	145	0	87	694	68	0	5154
APPROACH %'s :	8.20%	83.32%	8.48%	0.00%	4.28%	83.84%	11.88%	0.00%	17.03%	74.49%	8.48%	0.00%	10.25%	81.74%	8.01%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	61	607	61	0	28	467	71	0	161	691	79	0	41	370	42	0	2679
PEAK HR FACTOR :	0.693	0.925	0.897	0.000	0.700	0.858	0.807	0.000	0.821	0.982	0.823	0.000	0.683	0.777	0.656	0.000	0.950
	0.930				0.852				0.954				0.755				

National Data & Surveying Services Intersection Turning Movement Count

Location: Orange Ave & Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 18-05307-045
Date: 5/23/2018

Total

NS/EW Streets:	Orange Ave				Orange Ave				Pacific Coast Hwy				Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	20	66	27	0	21	41	17	0	14	158	13	0	30	229	19	0	655
7:15 AM	22	100	30	0	18	70	31	0	17	190	16	0	48	304	18	0	864
7:30 AM	23	141	51	0	6	77	45	0	37	184	27	0	55	330	26	0	1002
7:45 AM	13	117	59	0	14	80	20	0	30	256	14	0	63	347	48	0	1061
8:00 AM	31	117	48	0	21	102	17	0	26	204	18	0	39	287	32	0	942
8:15 AM	14	103	46	0	19	66	12	0	18	200	21	0	39	264	29	0	831
8:30 AM	17	99	44	0	24	90	20	1	22	201	16	0	43	247	48	0	872
8:45 AM	17	93	44	0	18	82	19	0	18	213	17	0	45	312	39	0	917
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	157	836	349	0	141	608	181	1	182	1606	142	0	362	2320	259	0	7144
APPROACH %'s :	11.70%	62.30%	26.01%	0.00%	15.15%	65.31%	19.44%	0.11%	9.43%	83.21%	7.36%	0.00%	12.31%	78.88%	8.81%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	89	475	188	0	59	329	113	0	110	834	75	0	205	1268	124	0	3869
PEAK HR FACTOR :	0.718	0.842	0.797	0.000	0.702	0.806	0.628	0.000	0.743	0.814	0.694	0.000	0.813	0.914	0.646	0.000	0.912
	0.874				0.895				0.849				0.872				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	17	121	60	0	17	112	34	0	20	314	22	0	45	199	32	0	993
4:15 PM	17	111	52	0	25	125	20	0	12	285	26	0	45	230	37	0	985
4:30 PM	19	98	68	0	20	110	36	0	17	358	34	0	34	213	14	0	1021
4:45 PM	18	120	71	0	19	116	25	0	23	350	23	0	24	180	31	0	1000
5:00 PM	22	112	73	0	24	131	33	0	26	393	25	0	40	213	46	0	1138
5:15 PM	17	114	64	0	24	143	20	0	21	398	19	0	48	201	38	0	1107
5:30 PM	14	104	55	0	21	102	34	0	24	323	23	0	44	217	36	0	997
5:45 PM	16	94	53	0	21	100	33	0	18	317	19	0	43	187	30	0	931
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	140	874	496	0	171	939	235	0	161	2738	191	0	323	1640	264	0	8172
APPROACH %'s :	9.27%	57.88%	32.85%	0.00%	12.71%	69.81%	17.47%	0.00%	5.21%	88.61%	6.18%	0.00%	14.50%	73.64%	11.85%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	76	444	276	0	87	500	114	0	87	1499	101	0	146	807	129	0	4266
PEAK HR FACTOR :	0.864	0.925	0.945	0.000	0.906	0.874	0.792	0.000	0.837	0.942	0.743	0.000	0.760	0.947	0.701	0.000	0.937
	0.952				0.932				0.950				0.905				

National Data & Surveying Services Intersection Turning Movement Count

Location: Alamitos Ave & Anaheim St
City: Long Beach
Control: Signalized

Project ID: 18-05307-044
Date: 5/23/2018

Total

NS/EW Streets:	Alamitos Ave				Alamitos Ave				Anaheim St				Anaheim St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	17	41	11	0	10	62	12	0	12	141	5	0	18	213	5	0	547
7:15 AM	18	94	15	0	14	79	14	0	16	185	1	0	23	256	10	0	725
7:30 AM	19	120	23	0	18	92	18	0	14	181	11	0	31	328	16	0	871
7:45 AM	20	133	34	0	12	109	24	0	20	229	9	0	30	294	19	0	933
8:00 AM	19	108	19	0	15	99	22	0	16	199	8	0	15	248	11	0	779
8:15 AM	17	97	21	0	12	76	17	0	11	189	12	0	22	258	10	0	742
8:30 AM	14	94	19	0	17	106	19	0	11	182	9	0	19	216	11	0	717
8:45 AM	17	95	29	0	9	112	20	0	20	167	9	0	21	237	14	0	750
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	141	782	171	0	107	735	146	0	120	1473	64	0	179	2050	96	0	6064
APPROACH %'s :	12.89%	71.48%	15.63%	0.00%	10.83%	74.39%	14.78%	0.00%	7.24%	88.90%	3.86%	0.00%	7.70%	88.17%	4.13%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	75	458	97	0	57	376	81	0	61	798	40	0	98	1128	56	0	3325
PEAK HR FACTOR :	0.938	0.861	0.713	0.000	0.792	0.862	0.844	0.000	0.763	0.871	0.833	0.000	0.790	0.860	0.737	0.000	0.891
	0.842				0.886				0.871				0.855				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	26	104	29	0	15	99	23	0	19	316	14	0	13	207	19	0	884
4:15 PM	17	101	19	0	16	103	16	0	25	330	13	0	15	246	19	0	920
4:30 PM	25	96	25	0	17	89	16	0	29	327	17	0	17	201	13	0	872
4:45 PM	19	118	34	0	15	93	27	0	32	331	13	0	23	212	20	0	937
5:00 PM	16	115	26	0	18	105	19	0	22	265	14	0	19	227	22	0	868
5:15 PM	19	115	27	0	11	123	17	0	17	348	22	0	23	223	14	0	959
5:30 PM	15	93	27	0	23	112	17	0	28	319	13	0	15	213	18	0	893
5:45 PM	10	90	34	0	23	105	14	0	22	307	14	0	21	229	12	0	881
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	147	832	221	0	138	829	149	0	194	2543	120	0	146	1758	137	0	7214
APPROACH %'s :	12.25%	69.33%	18.42%	0.00%	12.37%	74.28%	13.35%	0.00%	6.79%	89.01%	4.20%	0.00%	7.15%	86.13%	6.71%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	69	441	114	0	67	433	80	0	99	1263	62	0	80	875	74	0	3657
PEAK HR FACTOR :	0.908	0.934	0.838	0.000	0.728	0.880	0.741	0.000	0.773	0.907	0.705	0.000	0.870	0.964	0.841	0.000	0.953
	0.912				0.954				0.920				0.960				

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

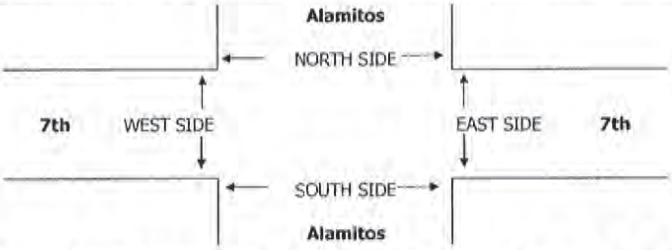
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	27
	EAST & WEST:	7th	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N ▲ / ◄ W / E ► / S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 1	NT 1	NR 2	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	20	45	75	13	46	15	3	55	5	37	299	8	621	0	0	0	0	0
	7:15 AM	22	64	81	14	68	19	7	69	3	56	350	7	760	0	0	0	0	0
	7:30 AM	30	86	93	14	72	29	9	77	8	51	333	11	813	0	0	0	0	0
	7:45 AM	22	80	83	10	96	44	5	84	11	56	285	18	794	0	0	0	0	0
	8:00 AM	25	83	102	15	76	18	3	90	12	48	279	16	767	0	0	0	0	0
	8:15 AM	21	70	88	17	96	18	5	69	5	49	329	13	780	0	0	0	0	0
	8:30 AM	25	69	98	16	91	9	1	55	6	32	257	14	673	0	0	0	0	0
	8:45 AM	24	74	93	13	98	13	8	73	8	47	307	21	779	0	0	0	0	0
	VOLUMES	189	571	713	112	643	165	41	572	58	376	2,439	108	5,987	0	0	0	0	0
	APPROACH %	13%	39%	48%	12%	70%	18%	6%	85%	9%	13%	83%	4%						
	APP/DEPART	1,473	/	720	920	/	1,077	671	/	1,397	2,923	/	2,793	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	98	319	366	56	340	109	22	320	36	204	1,226	58	3,154					
	APPROACH %	13%	41%	47%	11%	67%	22%	6%	85%	10%	14%	82%	4%						
	PEAK HR FACTOR		0.932			0.842			0.900			0.942		0.970					
	APP/DEPART	783	/	399	505	/	580	378	/	742	1,488	/	1,433	0					
PM	4:00 PM	24	106	139	17	61	14	9	158	5	21	207	19	780	0	0	0	0	0
	4:15 PM	25	100	188	17	70	14	10	133	5	29	199	16	806	0	0	0	0	0
	4:30 PM	23	102	180	21	92	12	7	160	9	32	216	13	867	0	0	0	0	0
	4:45 PM	25	96	199	14	91	17	9	167	12	32	158	22	842	0	0	0	0	0
	5:00 PM	24	100	185	8	67	14	10	198	7	29	155	12	809	0	0	0	0	0
	5:15 PM	25	118	191	15	79	20	11	190	11	37	173	12	882	0	0	0	0	0
	5:30 PM	22	96	182	16	82	11	8	152	13	33	166	13	794	0	0	0	0	0
	5:45 PM	26	103	184	20	75	17	4	165	5	29	162	20	810	0	0	0	0	0
	VOLUMES	194	821	1,448	128	617	119	68	1,323	67	242	1,436	127	6,590	0	0	0	0	0
	APPROACH %	8%	33%	59%	15%	71%	14%	5%	91%	5%	13%	80%	7%						
	APP/DEPART	2,463	/	1,016	864	/	926	1,458	/	2,899	1,805	/	1,749	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	97	416	755	58	329	63	37	715	39	130	702	59	3,400					
	APPROACH %	8%	33%	60%	13%	73%	14%	5%	90%	5%	15%	79%	7%						
	PEAK HR FACTOR		0.949			0.900			0.920			0.853		0.964					
	APP/DEPART	1,268	/	512	450	/	498	791	/	1,528	891	/	862	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

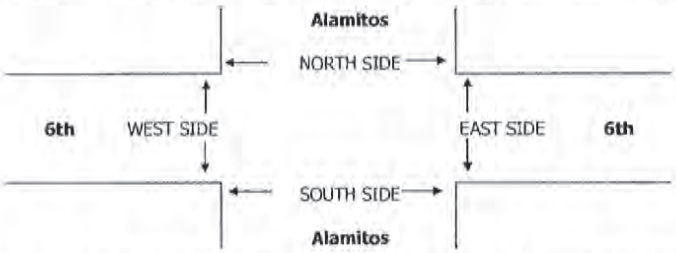
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	28
	EAST & WEST:	6th	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 6th			WESTBOUND 6th				U-TURNS				
	LANES:	NL X	NT 2	NR 0	SL 0	ST 2	SR X	EL 0.5	ET 0.5	ER 1	WL 0.5	WT X	WR 0.5	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	77	1	0	88	0	52	0	17	0	0	6	241	0	0	0	0	0
	7:15 AM	0	90	6	0	129	0	50	0	26	0	0	3	304	0	0	0	0	0
	7:30 AM	0	131	2	0	131	0	77	0	20	2	0	4	367	0	0	0	0	0
	7:45 AM	0	123	2	1	162	0	66	4	46	7	0	6	417	0	0	0	0	0
	8:00 AM	0	120	2	2	131	0	80	4	35	1	0	9	384	0	0	0	0	0
	8:15 AM	0	102	3	2	150	0	66	5	19	0	0	6	353	0	0	0	0	0
	8:30 AM	0	108	3	9	113	0	56	8	24	5	0	26	352	0	0	0	0	0
	8:45 AM	0	95	2	11	134	0	56	17	29	13	0	59	416	0	0	0	0	0
	VOLUMES	0	846	21	25	1,038	0	503	38	216	28	0	119	2,834	0	0	0	0	0
	APPROACH %	0%	98%	2%	2%	98%	0%	66%	5%	29%	19%	0%	81%						
	APP/DEPART	867	/	1,468	1,063	/	1,282	757	/	84	147	/	0	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	476	9	5	574	0	289	13	120	10	0	25	1,521					
	APPROACH %	0%	98%	2%	1%	99%	0%	68%	3%	28%	29%	0%	71%						
	PEAK HR FACTOR		0.912			0.888			0.887			0.673		0.912					
	APP/DEPART	485	/	790	579	/	704	422	/	27	35	/	0	0					
PM	4:00 PM	0	192	3	2	89	0	87	3	61	1	0	7	445	0	0	0	0	0
	4:15 PM	0	185	2	3	94	0	95	6	54	1	0	2	442	0	0	0	0	0
	4:30 PM	0	208	2	3	128	0	87	9	66	1	0	6	510	0	0	0	0	0
	4:45 PM	0	214	1	0	124	0	105	7	63	2	0	2	518	0	0	0	0	0
	5:00 PM	0	217	4	4	109	0	110	2	62	3	0	1	512	0	0	0	0	0
	5:15 PM	0	208	2	1	127	0	105	6	75	1	0	3	528	0	0	0	0	0
	5:30 PM	0	196	2	3	129	0	98	7	67	3	0	7	512	0	0	0	0	0
	5:45 PM	0	194	5	3	101	0	112	3	53	2	0	5	478	0	0	0	0	0
	VOLUMES	0	1,614	21	19	901	0	799	43	501	14	0	33	3,945	0	0	0	0	0
	APPROACH %	0%	99%	1%	2%	98%	0%	59%	3%	37%	30%	0%	70%						
	APP/DEPART	1,635	/	2,446	920	/	1,416	1,343	/	83	47	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	835	9	8	489	0	418	22	267	9	0	13	2,070					
	APPROACH %	0%	99%	1%	2%	98%	0%	59%	3%	38%	41%	0%	59%						
	PEAK HR FACTOR		0.955			0.941			0.950			0.550		0.980					
	APP/DEPART	844	/	1,266	497	/	765	707	/	39	22	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Long Beach
N/S: Alamitos Avenue
E/W: E 3rd Street
Weather: Clear

File Name : LBCAL3RAM
Site Code : 04216672
Start Date : 12/8/2016
Page No : 1

Groups Printed- Total Volume

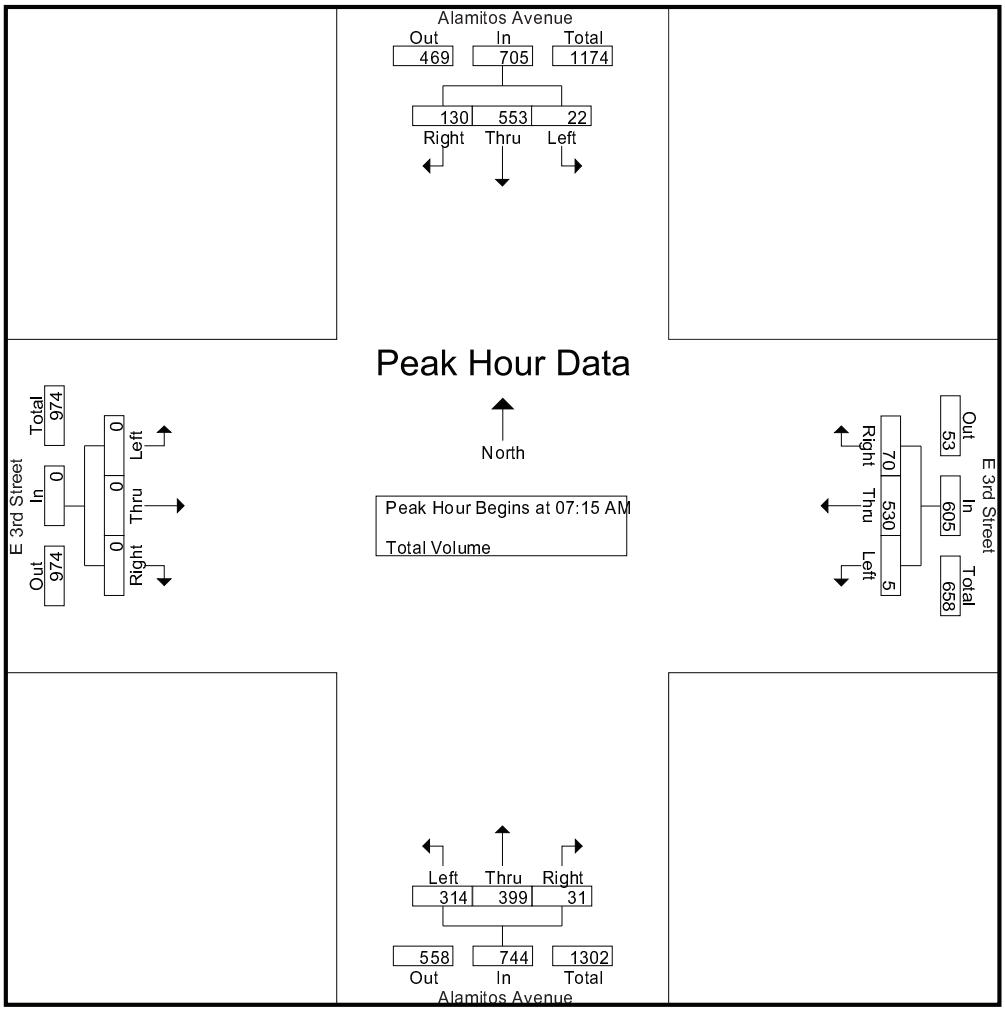
	Alamitos Avenue Southbound				E 3rd Street Westbound				Alamitos Avenue Northbound				E 3rd Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	113	27	149	2	106	9	117	58	79	3	140	0	0	0	0	406
07:15 AM	1	127	29	157	1	142	14	157	71	92	10	173	0	0	0	0	487
07:30 AM	2	137	27	166	0	124	18	142	88	105	4	197	0	0	0	0	505
07:45 AM	12	136	42	190	4	141	25	170	82	119	10	211	0	0	0	0	571
Total	24	513	125	662	7	513	66	586	299	395	27	721	0	0	0	0	1969
08:00 AM	7	153	32	192	0	123	13	136	73	83	7	163	0	0	0	0	491
08:15 AM	6	129	33	168	1	107	9	117	80	98	5	183	0	0	0	0	468
08:30 AM	12	139	33	184	0	89	15	104	85	108	5	198	0	0	0	0	486
08:45 AM	7	138	46	191	0	84	14	98	75	100	5	180	0	0	0	0	469
Total	32	559	144	735	1	403	51	455	313	389	22	724	0	0	0	0	1914
Grand Total	56	1072	269	1397	8	916	117	1041	612	784	49	1445	0	0	0	0	3883
Apprch %	4	76.7	19.3		0.8	88	11.2		42.4	54.3	3.4		0	0	0		
Total %	1.4	27.6	6.9	36	0.2	23.6	3	26.8	15.8	20.2	1.3	37.2	0	0	0	0	

	Alamitos Avenue Southbound				E 3rd Street Westbound				Alamitos Avenue Northbound				E 3rd Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	127	29	157	1	**142**	14	157	71	92	**10**	173	0	0	0	0	487
07:30 AM	2	137	27	166	0	124	18	142	**88**	105	4	197	0	0	0	0	505
07:45 AM	**12**	136	**42**	190	**4**	141	**25**	**170**	82	**119**	10	**211**	0	0	0	0	**571**
08:00 AM	7	**153**	32	**192**	0	123	13	136	73	83	7	163	0	0	0	0	491
Total Volume	22	553	130	705	5	530	70	605	314	399	31	744	0	0	0	0	2054
% App. Total	3.1	78.4	18.4		0.8	87.6	11.6		42.2	53.6	4.2		0	0	0		
PHF	.458	.904	.774	.918	.313	.933	.700	.890	.892	.838	.775	.882	.000	.000	.000	.000	.899

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Long Beach
N/S: Alamitos Avenue
E/W: E 3rd Street
Weather: Clear

File Name : LBCAL3RAM
Site Code : 04216672
Start Date : 12/8/2016
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:15 AM				07:45 AM				07:00 AM			
+0 mins.	7	**153**	32	**192**	1	**142**	14	157	82	**119**	**10**	**211**	0	0	0	0
+15 mins.	6	129	33	168	0	124	18	142	73	83	7	163	0	0	0	0
+30 mins.	**12**	139	33	184	**4**	141	**25**	**170**	80	98	5	183	0	0	0	0
+45 mins.	7	138	**46**	191	0	123	13	136	**85**	108	5	198	0	0	0	0
Total Volume	32	559	144	735	5	530	70	605	320	408	27	755	0	0	0	0
% App. Total	4.4	76.1	19.6		0.8	87.6	11.6		42.4	54	3.6		0	0	0	
PHF	.667	.913	.783	.957	.313	.933	.700	.890	.941	.857	.675	.895	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Long Beach
N/S: Alamitos Avenue
E/W: E 3rd Street
Weather: Clear

File Name : LBCAL3RPM
Site Code : 04216672
Start Date : 12/8/2016
Page No : 1

Groups Printed- Total Volume

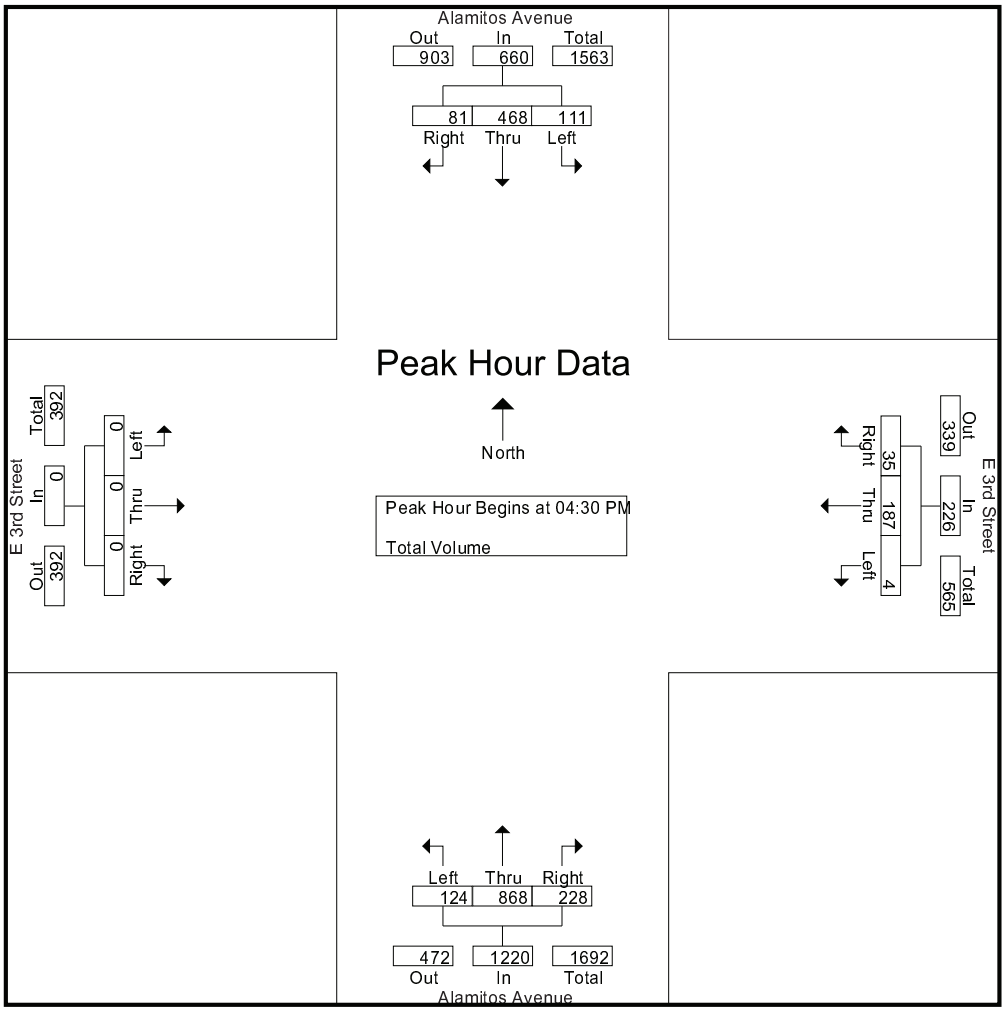
	Alamitos Avenue Southbound				E 3rd Street Westbound				Alamitos Avenue Northbound				E 3rd Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	17	101	23	141	0	48	7	55	29	210	36	275	0	0	0	0	471
04:15 PM	30	88	13	131	2	38	4	44	21	179	28	228	0	0	0	0	403
04:30 PM	22	126	22	170	2	40	12	54	37	223	47	307	0	0	0	0	531
04:45 PM	26	110	20	156	1	51	11	63	36	205	55	296	0	0	0	0	515
Total	95	425	78	598	5	177	34	216	123	817	166	1106	0	0	0	0	1920
05:00 PM	30	113	16	159	0	59	9	68	33	222	64	319	0	0	0	0	546
05:15 PM	33	119	23	175	1	37	3	41	18	218	62	298	0	0	0	0	514
05:30 PM	32	95	21	148	2	50	12	64	36	168	56	260	0	0	0	0	472
05:45 PM	31	111	25	167	2	48	14	64	41	198	41	280	0	0	0	0	511
Total	126	438	85	649	5	194	38	237	128	806	223	1157	0	0	0	0	2043
Grand Total	221	863	163	1247	10	371	72	453	251	1623	389	2263	0	0	0	0	3963
Apprch %	17.7	69.2	13.1		2.2	81.9	15.9		11.1	71.7	17.2		0	0	0		
Total %	5.6	21.8	4.1	31.5	0.3	9.4	1.8	11.4	6.3	41	9.8	57.1	0	0	0	0	

	Alamitos Avenue Southbound				E 3rd Street Westbound				Alamitos Avenue Northbound				E 3rd Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	22	**126**	22	170	**2**	40	**12**	54	**37**	**223**	47	307	0	0	0	0	531
04:45 PM	26	110	20	156	1	51	11	63	36	205	55	296	0	0	0	0	515
05:00 PM	30	113	16	159	0	**59**	9	**68**	33	222	**64**	**319**	0	0	0	0	**546**
05:15 PM	**33**	119	**23**	**175**	1	37	3	41	18	218	62	298	0	0	0	0	514
Total Volume	111	468	81	660	4	187	35	226	124	868	228	1220	0	0	0	0	2106
% App. Total	16.8	70.9	12.3		1.8	82.7	15.5		10.2	71.1	18.7		0	0	0		
PHF	.841	.929	.880	.943	.500	.792	.729	.831	.838	.973	.891	.956	.000	.000	.000	.000	.964

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Long Beach
N/S: Alamitos Avenue
E/W: E 3rd Street
Weather: Clear

File Name : LBCAL3RPM
Site Code : 04216672
Start Date : 12/8/2016
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				04:30 PM				04:00 PM			
+0 mins.	22	**126**	22	170	0	**59**	9	**68**	**37**	**223**	47	307	0	0	0	0
+15 mins.	26	110	20	156	1	37	3	41	36	205	55	296	0	0	0	0
+30 mins.	30	113	16	159	**2**	50	12	64	33	222	**64**	**319**	0	0	0	0
+45 mins.	**33**	119	**23**	**175**	2	48	**14**	64	18	218	62	298	0	0	0	0
Total Volume	111	468	81	660	5	194	38	237	124	868	228	1220	0	0	0	0
% App. Total	16.8	70.9	12.3		2.1	81.9	16		10.2	71.1	18.7		0	0	0	
PHF	.841	.929	.880	.943	.625	.822	.679	.871	.838	.973	.891	.956	.000	.000	.000	.000

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

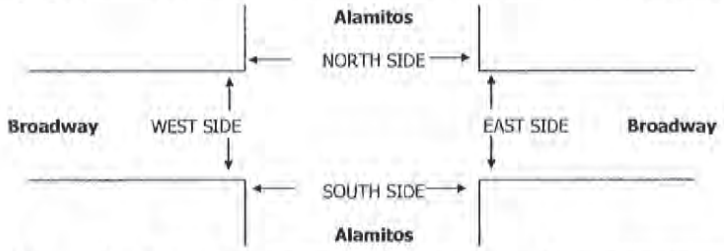
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	7
	EAST & WEST:	Broadway	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND Broadway			WESTBOUND Broadway				U-TURNS				
	LANES:	NL X	NT 2	NR 0	SL 1	ST 1	SR X	EL 2	ET 2	ER 1	WL 1	WT X	WR 1	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	39	4	8	69	0	14	45	6	49	0	69	303	0	0	0	1	1
	7:15 AM	0	69	9	5	99	0	18	39	6	76	0	84	405	0	0	0	1	1
	7:30 AM	0	69	5	8	99	0	12	43	4	82	0	89	411	0	0	0	0	0
	7:45 AM	0	65	7	15	122	0	17	61	10	110	0	92	499	0	0	0	1	1
	8:00 AM	0	72	12	10	102	0	16	44	6	89	0	73	424	0	0	0	0	0
	8:15 AM	0	70	6	4	118	0	20	60	4	87	0	79	448	0	0	0	0	0
	8:30 AM	0	76	12	9	87	0	22	59	9	74	0	70	418	0	0	0	0	0
	8:45 AM	0	61	10	15	104	0	27	53	12	74	0	94	450	0	0	0	0	0
	VOLUMES	0	521	65	74	800	0	146	404	57	641	0	650	3,358	0	0	0	3	3
	APPROACH %	0%	89%	11%	8%	92%	0%	24%	67%	9%	50%	0%	50%						
	APP/DEPART	586	/	1,317	874	/	1,495	607	/	546	1,291	/	0	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	283	37	38	429	0	75	224	29	360	0	314	1,789					
	APPROACH %	0%	88%	12%	8%	92%	0%	23%	68%	9%	53%	0%	47%						
	PEAK HR FACTOR		0.909			0.852			0.911			0.834		0.896					
	APP/DEPART	320	/	672	467	/	817	328	/	300	674	/	0	0					
PM	4:00 PM	0	138	46	16	67	0	61	171	14	28	0	29	570	0	0	0	0	0
	4:15 PM	0	148	47	25	71	0	72	164	11	26	0	43	607	0	0	0	0	0
	4:30 PM	0	196	52	21	69	0	93	193	10	25	0	35	694	0	0	0	0	0
	4:45 PM	0	145	46	26	68	0	89	218	13	29	0	32	666	0	0	0	0	0
	5:00 PM	0	206	69	17	67	0	94	208	17	35	0	50	763	0	0	0	0	0
	5:15 PM	0	190	56	23	80	0	89	230	10	37	0	39	754	0	0	0	0	0
	5:30 PM	0	160	55	21	87	0	92	198	13	27	0	32	685	0	0	0	0	0
	5:45 PM	0	167	34	15	75	0	60	188	21	25	0	40	625	0	0	0	0	0
	VOLUMES	0	1,350	405	164	584	0	650	1,570	109	232	0	300	5,364	0	0	0	0	0
	APPROACH %	0%	77%	23%	22%	78%	0%	28%	67%	5%	44%	0%	56%						
	APP/DEPART	1,755	/	2,300	748	/	925	2,329	/	2,139	532	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	737	223	87	284	0	365	849	50	126	0	156	2,877					
	APPROACH %	0%	77%	23%	23%	77%	0%	29%	67%	4%	45%	0%	55%						
	PEAK HR FACTOR		0.873			0.900			0.960			0.829		0.943					
	APP/DEPART	960	/	1,258	371	/	460	1,264	/	1,159	282	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Shoreline	LOCATION #:	18
	EAST & WEST:	Ocean	CONTROL:	SIGNAL

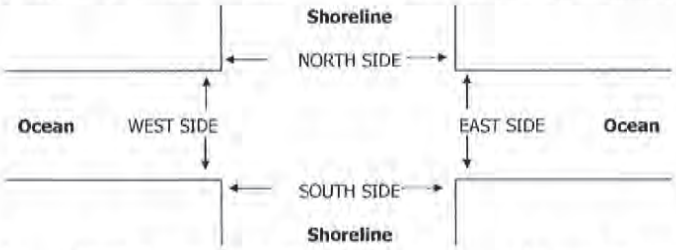
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Shoreline			SOUTHBOUND Shoreline			EASTBOUND Ocean			WESTBOUND Ocean				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	3	10	26	4	40	64	18	101	6	37	333	6	648	0	0	0	0	0
	7:15 AM	4	14	25	8	52	92	21	101	1	56	334	9	717	0	0	1	1	2
	7:30 AM	9	13	31	10	49	80	17	108	3	67	369	13	769	3	0	0	1	4
	7:45 AM	2	18	41	11	80	111	18	101	6	100	340	11	839	0	1	0	0	1
	8:00 AM	12	23	34	13	66	83	41	98	14	76	340	15	815	0	0	3	0	3
	8:15 AM	9	15	33	8	82	109	24	107	15	76	342	11	831	1	0	1	0	2
	8:30 AM	10	22	22	11	49	90	26	93	11	78	301	15	728	0	0	1	0	1
	8:45 AM	10	18	34	17	66	81	26	81	10	56	276	22	697	0	0	2	0	2
	VOLUMES	59	133	246	82	484	710	191	790	66	546	2,635	102	6,044	4	1	8	2	15
	APPROACH %	13%	30%	56%	6%	38%	56%	18%	75%	6%	17%	80%	3%						
	APP/DEPART	438	/	419	1,276	/	1,098	1,047	/	1,119	3,283	/	3,408	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	32	69	139	42	277	383	100	414	38	319	1,391	50	3,254					
	APPROACH %	13%	29%	58%	6%	39%	55%	18%	75%	7%	18%	79%	3%						
	PEAK HR FACTOR		0.870			0.869			0.902			0.976		0.970					
	APP/DEPART	240	/	216	702	/	637	552	/	595	1,760	/	1,806	0					
PM	4:00 PM	11	79	93	21	29	51	62	254	5	30	137	25	797	0	0	0	2	2
	4:15 PM	13	103	90	17	26	40	57	270	10	42	143	17	828	0	0	0	3	3
	4:30 PM	13	105	99	17	32	17	74	369	7	34	183	19	969	0	0	1	1	2
	4:45 PM	14	127	110	20	41	45	58	304	4	36	121	15	895	0	0	0	2	2
	5:00 PM	12	132	109	20	23	51	71	396	10	48	170	27	1,069	0	2	2	3	7
	5:15 PM	9	125	109	19	33	59	76	359	12	33	187	23	1,044	1	0	1	3	5
	5:30 PM	9	100	101	9	32	48	83	341	16	38	187	19	983	0	0	2	2	4
	5:45 PM	12	96	103	17	34	48	70	311	13	59	148	18	929	0	0	2	5	7
	VOLUMES	93	867	814	140	250	359	551	2,604	77	320	1,276	163	7,514	1	2	8	21	32
	APPROACH %	5%	49%	46%	19%	33%	48%	17%	81%	2%	18%	73%	9%						
	APP/DEPART	1,774	/	1,575	749	/	627	3,232	/	3,577	1,759	/	1,735	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	42	453	422	65	122	206	300	1,407	51	178	692	87	4,025					
	APPROACH %	5%	49%	46%	17%	31%	52%	17%	80%	3%	19%	72%	9%						
	PEAK HR FACTOR		0.906			0.885			0.921			0.977		0.941					
	APP/DEPART	917	/	835	393	/	339	1,758	/	1,905	957	/	946	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

National Data & Surveying Services Intersection Turning Movement Count

Location: Cherry Ave & Artesia Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-053
Date: 5/23/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				Artesia Blvd				Artesia Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	39	209	24	0	35	168	21	0	44	110	30	0	23	190	36	2	931
7:15 AM	32	190	38	0	32	198	22	0	56	148	39	0	25	195	45	1	1021
7:30 AM	30	190	32	0	40	180	21	0	48	120	27	1	24	162	31	2	908
7:45 AM	26	176	23	0	48	153	24	0	41	95	34	1	25	175	22	1	844
8:00 AM	18	129	26	0	30	135	38	0	41	125	20	2	22	151	28	10	775
8:15 AM	7	112	31	0	21	137	26	0	37	122	36	2	31	166	28	4	760
8:30 AM	6	117	19	0	29	151	16	0	32	101	21	1	30	118	24	1	666
8:45 AM	12	124	28	0	22	130	18	0	36	81	20	0	24	101	32	5	633
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	170	1247	221	0	257	1252	186	0	335	902	227	7	204	1258	246	26	6538
APPROACH %'s :	10.38%	76.13%	13.49%	0.00%	15.16%	73.86%	10.97%	0.00%	22.77%	61.32%	15.43%	0.48%	11.76%	72.55%	14.19%	1.50%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	127	765	117	0	155	699	88	0	189	473	130	2	97	722	134	6	3704
PEAK HR FACTOR :	0.814	0.915	0.770	0.000	0.807	0.883	0.917	0.000	0.844	0.799	0.833	0.500	0.970	0.926	0.744	0.750	0.907
	0.927				0.935				0.817				0.901				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	36	204	29	0	22	186	41	0	48	228	29	0	31	81	46	1	982
4:15 PM	29	207	27	0	33	204	29	0	44	268	32	1	25	139	47	2	1087
4:30 PM	37	209	41	0	21	174	30	0	44	266	32	0	19	132	45	3	1053
4:45 PM	28	242	19	0	29	178	35	0	46	230	35	0	33	135	44	2	1056
5:00 PM	30	212	38	0	32	186	22	0	40	212	43	1	31	116	48	2	1013
5:15 PM	32	205	26	0	25	194	30	0	44	236	28	0	26	130	47	3	1026
5:30 PM	17	134	26	0	28	169	34	0	33	254	32	2	37	125	26	2	919
5:45 PM	27	181	27	0	22	184	36	0	58	230	37	1	31	97	26	3	960
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	236	1594	233	0	212	1475	257	0	357	1924	268	5	233	955	329	18	8096
APPROACH %'s :	11.44%	77.27%	11.29%	0.00%	10.91%	75.87%	13.22%	0.00%	13.98%	75.33%	10.49%	0.20%	15.18%	62.21%	21.43%	1.17%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	124	870	125	0	115	742	116	0	174	976	142	2	108	522	184	9	4209
PEAK HR FACTOR :	0.838	0.899	0.762	0.000	0.871	0.909	0.829	0.000	0.946	0.910	0.826	0.500	0.818	0.939	0.958	0.750	0.968
	0.968				0.914				0.938				0.961				

National Data & Surveying Services Intersection Turning Movement Count

Location: Cherry Ave & Market St
City: Long Beach
Control: Signalized

Project ID: 18-05307-052
Date: 5/23/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				Market St				Market St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	8	152	19	0	22	266	8	0	14	63	25	0	35	95	22	0	729
7:15 AM	16	183	17	0	28	277	10	0	16	102	41	0	17	98	23	0	828
7:30 AM	14	163	38	1	41	335	9	0	16	102	48	0	35	102	19	0	923
7:45 AM	15	167	25	2	24	283	19	0	27	89	29	0	36	111	25	0	852
8:00 AM	11	179	22	0	35	251	18	1	23	77	36	0	31	81	29	0	794
8:15 AM	12	151	23	1	22	239	14	0	17	78	29	0	38	59	18	0	701
8:30 AM	10	138	12	0	43	237	13	0	20	106	29	0	27	78	20	0	733
8:45 AM	21	186	23	0	18	200	9	2	31	42	14	0	20	65	21	0	652
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	107	1319	179	4	233	2088	100	3	164	659	251	0	239	689	177	0	6212
APPROACH %'s :	6.65%	81.98%	11.12%	0.25%	9.61%	86.14%	4.13%	0.12%	15.27%	61.36%	23.37%	0.00%	21.63%	62.35%	16.02%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	56	692	102	3	128	1146	56	1	82	370	154	0	119	392	96	0	3397
PEAK HR FACTOR :	0.875	0.945	0.671	0.375	0.780	0.855	0.737	0.250	0.759	0.907	0.802	0.000	0.826	0.883	0.828	0.000	0.920
	0.987				0.864				0.913				0.882				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	23	252	38	1	34	184	24	3	29	122	19	0	26	89	23	0	867
4:15 PM	32	247	53	1	25	222	12	1	18	118	23	0	25	81	19	0	877
4:30 PM	23	250	50	0	39	205	17	5	24	133	29	0	18	82	25	0	900
4:45 PM	24	297	66	0	30	158	27	1	19	114	24	0	27	93	23	0	903
5:00 PM	25	275	63	1	36	202	13	3	29	145	23	0	26	101	42	0	984
5:15 PM	41	298	71	0	34	213	23	1	30	134	14	0	25	104	29	0	1017
5:30 PM	27	244	69	0	49	197	21	2	29	143	22	0	27	109	21	0	960
5:45 PM	31	275	79	2	31	182	22	4	25	136	20	0	29	82	25	0	943
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	226	2138	489	5	278	1563	159	20	203	1045	174	0	203	741	207	0	7451
APPROACH %'s :	7.91%	74.81%	17.11%	0.17%	13.76%	77.38%	7.87%	0.99%	14.28%	73.49%	12.24%	0.00%	17.64%	64.38%	17.98%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	124	1092	282	3	150	794	79	10	113	558	79	0	107	396	117	0	3904
PEAK HR FACTOR :	0.756	0.916	0.892	0.375	0.765	0.932	0.859	0.625	0.942	0.962	0.859	0.000	0.922	0.908	0.696	0.000	0.960
	0.915				0.953				0.952				0.917				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Cherry Ave & Del Amo Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-051
Date: 5/9/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	1	3	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	22	106	31	0	15	214	24	3	21	119	33	0	70	273	18	0	949
7:15 AM	30	123	40	0	36	302	31	0	23	139	35	1	61	306	14	1	1142
7:30 AM	33	148	58	0	33	323	43	2	27	186	58	0	79	309	16	1	1316
7:45 AM	18	177	47	3	30	360	51	0	30	153	46	0	93	284	17	0	1309
8:00 AM	27	159	60	2	29	277	20	1	23	133	54	0	91	323	21	0	1220
8:15 AM	29	161	58	0	26	265	26	3	18	130	45	2	79	224	9	0	1075
8:30 AM	27	148	48	0	39	247	24	3	27	170	48	0	94	242	12	2	1131
8:45 AM	30	177	59	2	33	243	25	3	22	140	44	0	71	169	20	2	1040
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	216	1199	401	7	241	2231	244	15	191	1170	363	3	638	2130	127	6	9182
APPROACH %'s :	11.85%	65.77%	22.00%	0.38%	8.82%	81.69%	8.93%	0.55%	11.06%	67.75%	21.02%	0.17%	21.99%	73.42%	4.38%	0.21%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	108	607	205	5	128	1262	145	3	103	611	193	1	324	1222	68	2	4987
PEAK HR FACTOR :	0.818	0.857	0.854	0.417	0.889	0.876	0.711	0.375	0.858	0.821	0.832	0.250	0.871	0.946	0.810	0.500	0.947
	0.932				0.872				0.838				0.929				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	1	3	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	36	288	62	2	17	175	20	3	41	289	50	2	84	190	21	1	1281
4:15 PM	43	315	91	1	27	198	18	2	39	303	48	1	77	153	18	0	1334
4:30 PM	33	297	78	2	24	192	35	4	40	326	42	0	73	175	34	1	1356
4:45 PM	42	335	86	1	24	203	19	2	47	239	61	3	66	161	27	1	1317
5:00 PM	42	265	82	2	23	179	22	5	44	270	64	1	81	201	45	0	1326
5:15 PM	56	364	82	3	23	212	24	1	44	257	52	0	83	173	17	1	1392
5:30 PM	42	284	90	0	21	200	23	1	59	312	58	1	97	184	31	0	1403
5:45 PM	52	310	71	1	14	204	21	0	35	245	56	2	87	155	25	1	1279
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	346	2458	642	12	173	1563	182	18	349	2241	431	10	648	1392	218	5	10688
APPROACH %'s :	10.01%	71.08%	18.57%	0.35%	8.94%	80.73%	9.40%	0.93%	11.51%	73.94%	14.22%	0.33%	28.63%	61.51%	9.63%	0.22%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	182	1248	340	6	91	794	88	9	194	1078	235	5	327	719	120	2	5438
PEAK HR FACTOR :	0.813	0.857	0.944	0.500	0.948	0.936	0.917	0.450	0.822	0.864	0.918	0.417	0.843	0.894	0.667	0.500	0.969
	0.879				0.944				0.879				0.893				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Cherry Ave & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05307-050
Date: 5/9/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				Carson St				Carson St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	4	1	0	2	3	0	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	99	35	0	71	309	12	0	7	99	18	0	65	96	32	0	858
7:15 AM	20	131	46	0	69	328	19	0	8	140	29	0	96	184	39	0	1109
7:30 AM	24	139	41	0	94	371	19	0	15	181	19	0	91	180	34	0	1208
7:45 AM	31	158	51	0	74	324	14	0	19	145	27	0	108	211	45	0	1207
8:00 AM	29	151	38	0	73	247	15	0	16	138	24	0	78	179	52	0	1040
8:15 AM	24	153	46	0	64	269	24	0	15	143	20	0	76	151	40	0	1025
8:30 AM	29	119	57	0	77	247	16	0	20	143	30	0	69	210	45	0	1062
8:45 AM	26	154	43	0	63	245	10	0	21	138	11	0	75	161	44	0	991
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	198	1104	357	0	585	2340	129	0	121	1127	178	0	658	1372	331	0	8500
APPROACH %'s :	11.93%	66.55%	21.52%	0.00%	19.16%	76.62%	4.22%	0.00%	8.49%	79.03%	12.48%	0.00%	27.87%	58.11%	14.02%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	104	579	176	0	310	1270	67	0	58	604	99	0	373	754	170	0	4564
PEAK HR FACTOR :	0.839	0.916	0.863	0.000	0.824	0.856	0.882	0.000	0.763	0.834	0.853	0.000	0.863	0.893	0.817	0.000	0.945
	0.895				0.851				0.885				0.891				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	4	1	0	2	3	0	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	24	266	45	0	78	181	13	0	33	206	16	0	66	170	73	0	1171
4:15 PM	27	282	77	0	93	166	9	0	35	229	16	0	75	155	65	0	1229
4:30 PM	22	286	63	0	94	187	13	0	23	256	17	0	79	158	77	0	1275
4:45 PM	39	289	81	0	90	172	14	0	19	239	12	0	80	148	55	0	1238
5:00 PM	32	276	67	0	99	178	10	0	49	283	20	0	71	165	74	0	1324
5:15 PM	39	314	82	0	68	202	15	0	42	264	16	0	78	157	66	0	1343
5:30 PM	30	244	73	0	113	200	16	0	27	276	24	0	83	183	71	0	1340
5:45 PM	30	290	69	0	75	193	11	0	21	209	19	0	59	163	49	0	1188
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	243	2247	557	0	710	1479	101	0	249	1962	140	0	591	1299	530	0	10108
APPROACH %'s :	7.98%	73.74%	18.28%	0.00%	31.00%	64.59%	4.41%	0.00%	10.59%	83.45%	5.95%	0.00%	24.42%	53.68%	21.90%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	140	1123	303	0	370	752	55	0	137	1062	72	0	312	653	266	0	5245
PEAK HR FACTOR :	0.897	0.894	0.924	0.000	0.819	0.931	0.859	0.000	0.699	0.938	0.750	0.000	0.940	0.892	0.899	0.000	0.976
	0.900				0.894				0.903				0.913				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Cherry Ave & Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 18-05307-049
Date: 5/9/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				Wardlow Rd				Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1.5	1.5	0	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	13	214	8	0	9	370	40	0	52	2	22	0	7	0	12	0	749
7:15 AM	32	262	8	0	5	448	54	1	43	2	28	0	6	1	4	0	894
7:30 AM	43	267	7	0	10	502	63	1	70	5	37	0	14	6	7	0	1032
7:45 AM	33	320	11	1	12	540	65	1	61	4	34	0	5	7	5	0	1099
8:00 AM	64	307	18	0	7	403	67	1	80	8	29	0	10	3	7	0	1004
8:15 AM	41	319	6	1	15	406	54	0	51	6	31	0	10	1	4	0	945
8:30 AM	38	295	15	1	6	385	47	2	58	5	28	0	19	5	6	0	910
8:45 AM	38	318	15	0	9	409	52	1	55	5	26	0	6	5	8	0	947
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	302	2302	88	3	73	3463	442	7	470	37	235	0	77	28	53	0	7580
APPROACH %'s :	11.21%	85.42%	3.27%	0.11%	1.83%	86.90%	11.09%	0.18%	63.34%	4.99%	31.67%	0.00%	48.73%	17.72%	33.54%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	181	1213	42	2	44	1851	249	3	262	23	131	0	39	17	23	0	4080
PEAK HR FACTOR :	0.707	0.948	0.583	0.500	0.733	0.857	0.929	0.750	0.819	0.719	0.885	0.000	0.696	0.607	0.821	0.000	0.928
	0.924				0.869				0.889				0.731				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1.5	1.5	0	0	1.5	1.5	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	387	9	0	10	323	57	2	106	6	51	0	24	1	10	0	1005
4:15 PM	23	414	11	0	14	378	55	1	102	7	38	0	13	5	10	0	1071
4:30 PM	34	384	13	0	18	321	57	1	136	8	44	0	19	4	14	0	1053
4:45 PM	45	435	11	0	12	373	48	1	103	5	28	0	9	2	10	0	1082
5:00 PM	38	391	13	0	9	352	51	4	140	7	42	0	20	2	10	0	1079
5:15 PM	44	455	15	0	7	430	56	2	126	12	39	0	12	9	17	0	1224
5:30 PM	33	367	8	0	5	364	60	1	134	5	42	0	22	5	16	0	1062
5:45 PM	32	476	14	0	6	409	59	0	105	2	25	0	14	6	5	0	1153
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	268	3309	94	0	81	2950	443	12	952	52	309	0	133	34	92	0	8729
APPROACH %'s :	7.30%	90.14%	2.56%	0.00%	2.32%	84.62%	12.71%	0.34%	72.51%	3.96%	23.53%	0.00%	51.35%	13.13%	35.52%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	147	1689	50	0	27	1555	226	7	505	26	148	0	68	22	48	0	4518
PEAK HR FACTOR :	0.835	0.887	0.833	0.000	0.750	0.904	0.942	0.438	0.902	0.542	0.881	0.000	0.773	0.611	0.706	0.000	0.923
	0.903				0.917				0.898				0.802				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Cherry Ave & Willow St
City: Long Beach
Control: Signalized

Project ID: 18-05307-105
Date: 5/23/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	3	0	0	2	3	0	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	33	209	39	10	40	144	26	0	31	125	16	0	38	178	18	0	907
7:15 AM	36	223	34	7	53	170	29	0	46	218	12	0	53	271	29	0	1181
7:30 AM	44	291	46	7	39	224	45	0	34	246	18	3	67	256	14	0	1334
7:45 AM	34	270	59	9	44	158	30	0	34	266	17	0	65	296	45	1	1328
8:00 AM	54	263	60	14	54	207	23	0	50	217	21	0	62	247	26	0	1298
8:15 AM	21	226	57	10	45	163	30	0	63	243	32	2	54	231	31	0	1208
8:30 AM	36	242	62	12	49	222	31	0	44	198	20	1	46	216	23	0	1202
8:45 AM	39	211	59	10	51	173	35	0	47	198	34	1	55	216	39	0	1168
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	297	1935	416	79	375	1461	249	0	349	1711	170	7	440	1911	225	1	9626
APPROACH %'s :	10.89%	70.96%	15.25%	2.90%	17.99%	70.07%	11.94%	0.00%	15.60%	76.49%	7.60%	0.31%	17.07%	74.16%	8.73%	0.04%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	153	1050	222	40	182	752	128	0	181	972	88	5	248	1030	116	1	5168
PEAK HR FACTOR :	0.708	0.902	0.925	0.714	0.843	0.839	0.711	0.000	0.718	0.914	0.688	0.417	0.925	0.870	0.644	0.250	0.969
	0.937				0.862				0.916				0.857				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	3	0	0	2	3	0	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	23	172	59	3	85	226	44	0	53	283	29	0	46	221	70	2	1316
4:15 PM	39	202	39	4	83	203	44	0	46	278	30	0	67	196	42	1	1274
4:30 PM	24	198	50	1	79	227	37	0	34	348	33	0	59	230	56	1	1377
4:45 PM	36	207	60	4	60	209	43	0	48	311	24	0	75	204	51	0	1332
5:00 PM	23	173	55	4	84	215	39	0	38	349	31	0	65	272	60	1	1409
5:15 PM	29	203	67	7	68	226	40	0	56	284	22	0	90	236	56	0	1384
5:30 PM	37	175	37	3	82	225	42	0	60	343	42	0	69	247	50	0	1412
5:45 PM	36	194	58	11	74	245	37	0	43	275	39	0	85	207	47	1	1352
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	247	1524	425	37	615	1776	326	0	378	2471	250	0	556	1813	432	6	10856
APPROACH %'s :	11.06%	68.25%	19.03%	1.66%	22.64%	65.37%	12.00%	0.00%	12.20%	79.74%	8.07%	0.00%	19.81%	64.59%	15.39%	0.21%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	125	745	217	25	308	911	158	0	197	1251	134	0	309	962	213	2	5557
PEAK HR FACTOR :	0.845	0.917	0.810	0.568	0.917	0.930	0.940	0.000	0.821	0.896	0.798	0.000	0.858	0.884	0.888	0.500	0.984
	0.908				0.967				0.889				0.933				

National Data & Surveying Services Intersection Turning Movement Count

Location: Cherry Ave & Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 18-05307-048
Date: 5/23/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				Pacific Coast Hwy				Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	17	100	7	0	19	59	26	0	32	182	7	0	7	239	40	0	735
7:15 AM	17	148	2	0	22	84	62	0	34	219	19	0	5	287	45	0	944
7:30 AM	23	134	4	0	43	80	80	0	53	194	26	0	8	359	46	0	1050
7:45 AM	30	135	8	0	39	99	53	0	55	239	14	0	14	320	35	0	1041
8:00 AM	16	113	8	0	38	102	69	0	32	231	18	0	8	289	55	0	979
8:15 AM	13	127	9	0	34	98	39	0	40	213	12	0	10	257	40	0	892
8:30 AM	19	106	5	0	40	119	56	0	39	241	20	0	5	290	59	0	999
8:45 AM	19	130	9	0	35	138	77	0	44	197	18	0	25	283	58	0	1033
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	154	993	52	0	270	779	462	0	329	1716	134	0	82	2324	378	0	7673
APPROACH %'s :	12.84%	82.82%	4.34%	0.00%	17.87%	51.56%	30.58%	0.00%	15.10%	78.75%	6.15%	0.00%	2.95%	83.48%	13.58%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	86	530	22	0	142	365	264	0	174	883	77	0	35	1255	181	0	4014
PEAK HR FACTOR :	0.717	0.895	0.688	0.000	0.826	0.895	0.825	0.000	0.791	0.924	0.740	0.000	0.625	0.874	0.823	0.000	0.956
	0.922				0.922				0.920				0.890				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	18	99	6	0	52	163	79	0	45	322	24	0	12	236	40	0	1096
4:15 PM	12	107	8	0	46	156	62	0	43	283	25	0	18	244	29	0	1033
4:30 PM	12	103	6	0	53	131	54	0	42	359	17	0	14	206	39	0	1036
4:45 PM	8	99	7	0	52	134	54	0	53	378	20	0	17	211	39	0	1072
5:00 PM	19	106	6	0	47	168	43	0	57	407	20	0	16	267	39	0	1195
5:15 PM	18	100	8	0	56	133	53	0	51	390	22	0	19	247	51	0	1148
5:30 PM	15	104	11	0	38	150	63	0	48	321	25	0	20	223	35	0	1053
5:45 PM	15	100	8	0	39	151	58	0	50	293	13	0	17	210	34	0	988
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	117	818	60	0	383	1186	466	0	389	2753	166	0	133	1844	306	0	8621
APPROACH %'s :	11.76%	82.21%	6.03%	0.00%	18.82%	58.28%	22.90%	0.00%	11.76%	83.22%	5.02%	0.00%	5.83%	80.77%	13.40%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	60	409	32	0	193	585	213	0	209	1496	87	0	72	948	164	0	4468
PEAK HR FACTOR :	0.789	0.965	0.727	0.000	0.862	0.871	0.845	0.000	0.917	0.919	0.870	0.000	0.900	0.888	0.804	0.000	0.935
	0.956				0.960				0.926				0.919				

National Data & Surveying Services Intersection Turning Movement Count

Location: Cherry Ave & 7th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-047
Date: 5/23/2018

Total

NS/EW Streets:	Cherry Ave				Cherry Ave				7th St				7th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	11	29	20	0	23	25	4	0	7	187	2	0	13	293	13	0	627
7:15 AM	8	48	22	0	27	46	7	0	8	233	2	0	10	303	18	0	732
7:30 AM	14	54	31	0	23	39	8	0	7	245	5	0	12	354	13	0	805
7:45 AM	11	68	18	0	28	52	9	0	9	233	8	0	15	321	13	0	785
8:00 AM	14	59	20	0	22	63	9	0	15	205	6	0	26	317	15	0	771
8:15 AM	11	57	18	0	14	44	21	0	9	209	3	0	20	299	16	0	721
8:30 AM	14	53	18	0	22	49	9	0	16	194	7	0	10	318	17	0	727
8:45 AM	6	53	27	0	23	63	15	0	12	183	8	0	21	277	18	0	706
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	89	421	174	0	182	381	82	0	83	1689	41	0	127	2482	123	0	5874
APPROACH %'s :	13.01%	61.55%	25.44%	0.00%	28.22%	59.07%	12.71%	0.00%	4.58%	93.16%	2.26%	0.00%	4.65%	90.85%	4.50%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	47	229	91	0	100	200	33	0	39	916	21	0	63	1295	59	0	3093
PEAK HR FACTOR :	0.839	0.842	0.734	0.000	0.893	0.794	0.917	0.000	0.650	0.935	0.656	0.000	0.606	0.915	0.819	0.000	0.961
	0.927				0.886				0.949				0.935				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	7	51	17	0	14	59	9	0	25	275	17	0	21	227	15	0	737
4:15 PM	12	60	24	0	19	72	14	0	19	283	4	0	14	207	18	0	746
4:30 PM	9	50	19	0	22	59	15	0	15	271	5	0	14	192	16	0	687
4:45 PM	9	49	15	0	14	70	11	0	15	317	3	0	19	223	15	0	760
5:00 PM	12	66	19	0	28	69	9	0	18	321	11	0	20	245	15	0	833
5:15 PM	10	56	18	0	24	66	9	0	22	379	10	0	13	236	13	0	856
5:30 PM	9	50	22	0	13	68	22	0	18	319	9	0	15	233	12	0	790
5:45 PM	10	47	19	0	17	72	14	0	12	284	6	0	14	203	25	0	723
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	78	429	153	0	151	535	103	0	144	2449	65	0	130	1766	129	0	6132
APPROACH %'s :	11.82%	65.00%	23.18%	0.00%	19.14%	67.81%	13.05%	0.00%	5.42%	92.14%	2.45%	0.00%	6.42%	87.21%	6.37%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	40	221	74	0	79	273	51	0	73	1336	33	0	67	937	55	0	3239
PEAK HR FACTOR :	0.833	0.837	0.841	0.000	0.705	0.975	0.580	0.000	0.830	0.881	0.750	0.000	0.838	0.956	0.917	0.000	0.946
	0.863				0.950				0.877				0.946				

National Data & Surveying Services Intersection Turning Movement Count

Location: Paramount Blvd & Artesia Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-054
Date: 5/23/2018

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				Artesia Blvd				Artesia Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	35	183	15	0	17	148	10	0	31	68	30	0	25	157	23	1	743
7:15 AM	46	188	16	0	11	162	19	0	20	87	33	0	28	171	26	0	807
7:30 AM	48	179	20	0	21	188	25	0	45	129	30	0	36	199	39	0	959
7:45 AM	44	176	12	0	25	189	26	0	27	123	42	0	32	173	34	2	905
8:00 AM	29	152	11	0	17	211	33	0	16	90	28	0	17	163	32	0	799
8:15 AM	33	129	12	0	20	168	32	0	31	108	22	0	15	147	31	2	750
8:30 AM	35	149	24	0	18	171	35	0	30	93	31	1	22	155	32	1	797
8:45 AM	17	150	11	0	21	141	23	0	26	98	32	1	16	121	17	1	675
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	287	1306	121	0	150	1378	203	0	226	796	248	2	191	1286	234	7	6435
APPROACH %'s :	16.74%	76.20%	7.06%	0.00%	8.67%	79.61%	11.73%	0.00%	17.77%	62.58%	19.50%	0.16%	11.12%	74.85%	13.62%	0.41%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	167	695	59	0	74	750	103	0	108	429	133	0	113	706	131	2	3470
PEAK HR FACTOR :	0.870	0.924	0.738	0.000	0.740	0.889	0.780	0.000	0.600	0.831	0.792	0.000	0.785	0.887	0.840	0.250	0.905
	0.921				0.888				0.821				0.869				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	28	219	19	0	28	147	17	0	45	188	27	0	28	105	28	0	879
4:15 PM	35	204	31	0	20	130	26	0	43	194	29	0	15	112	41	0	880
4:30 PM	35	186	22	0	27	175	24	0	44	217	35	0	12	108	40	2	927
4:45 PM	31	207	34	0	36	164	18	0	55	234	33	2	24	107	34	2	981
5:00 PM	31	228	14	0	18	137	24	0	48	233	34	2	16	124	37	2	948
5:15 PM	33	213	30	0	36	156	25	0	40	153	40	1	18	124	37	1	907
5:30 PM	31	206	25	0	26	118	17	0	52	243	46	1	20	133	45	1	964
5:45 PM	18	199	35	0	20	171	14	0	37	214	48	2	14	143	34	1	950
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	242	1662	210	0	211	1198	165	0	364	1676	292	8	147	956	296	9	7436
APPROACH %'s :	11.45%	78.62%	9.93%	0.00%	13.41%	76.11%	10.48%	0.00%	15.56%	71.62%	12.48%	0.34%	10.44%	67.90%	21.02%	0.64%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	126	854	103	0	116	575	84	0	195	863	153	6	78	488	153	6	3800
PEAK HR FACTOR :	0.955	0.936	0.757	0.000	0.806	0.877	0.840	0.000	0.886	0.888	0.832	0.750	0.813	0.917	0.850	0.750	0.968
	0.981				0.889				0.890				0.911				

National Data & Surveying Services Intersection Turning Movement Count

Location: Paramount Blvd & South St
City: Long Beach
Control: Signalized

Project ID: 18-05307-055
Date: 5/23/2018

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				South St				South St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	14	139	23	1	6	110	20	0	26	126	19	0	32	127	24	0	667
7:15 AM	27	160	18	0	15	143	18	0	15	150	33	0	23	149	28	0	779
7:30 AM	25	138	48	1	34	131	32	0	23	145	20	1	37	160	37	0	832
7:45 AM	17	165	48	0	32	137	28	0	31	144	27	0	28	147	42	0	846
8:00 AM	27	124	42	2	32	120	36	0	22	149	23	0	36	148	30	1	792
8:15 AM	16	95	33	1	26	137	18	0	25	147	22	1	53	128	32	0	734
8:30 AM	19	110	30	0	34	136	27	0	25	124	33	0	42	147	22	0	749
8:45 AM	25	113	28	1	25	125	20	0	25	135	25	0	27	136	27	0	712
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	170	1044	270	6	204	1039	199	0	192	1120	202	2	278	1142	242	1	6111
APPROACH %'s :	11.41%	70.07%	18.12%	0.40%	14.15%	72.05%	13.80%	0.00%	12.66%	73.88%	13.32%	0.13%	16.72%	68.67%	14.55%	0.06%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	96	587	156	3	113	531	114	0	91	588	103	1	124	604	137	1	3249
PEAK HR FACTOR :	0.889	0.889	0.813	0.375	0.831	0.928	0.792	0.000	0.734	0.980	0.780	0.250	0.838	0.944	0.815	0.250	0.960
	0.915				0.962				0.969				0.925				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	30	182	42	1	20	149	27	0	21	175	24	1	41	165	29	0	907
4:15 PM	19	150	33	1	32	129	29	1	40	182	41	0	49	172	32	0	910
4:30 PM	26	169	54	1	25	138	30	0	19	215	39	0	44	178	23	0	961
4:45 PM	31	118	45	2	42	152	36	0	39	222	48	0	46	167	28	1	977
5:00 PM	33	207	39	4	33	135	38	0	28	219	37	0	51	190	27	0	1041
5:15 PM	34	163	53	4	31	146	22	0	28	204	44	0	43	178	23	0	973
5:30 PM	35	166	45	0	20	116	30	0	26	228	44	0	33	153	27	0	923
5:45 PM	39	163	42	1	24	140	26	0	33	204	27	1	40	176	38	0	954
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	247	1318	353	14	227	1105	238	1	234	1649	304	2	347	1379	227	1	7646
APPROACH %'s :	12.78%	68.22%	18.27%	0.72%	14.45%	70.34%	15.15%	0.06%	10.69%	75.33%	13.89%	0.09%	17.76%	70.57%	11.62%	0.05%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	124	657	191	11	131	571	126	0	114	860	168	0	184	713	101	1	3952
PEAK HR FACTOR :	0.912	0.793	0.884	0.688	0.780	0.939	0.829	0.000	0.731	0.968	0.875	0.000	0.902	0.938	0.902	0.250	0.949
	0.868				0.900				0.924				0.932				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Paramount Blvd & Del Amo Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-094
Date: 5/23/2018

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	27	63	5	0	23	124	41	0	15	139	18	0	16	261	13	0	745
7:15 AM	24	72	9	0	25	168	50	2	21	206	18	0	19	295	17	0	926
7:30 AM	27	100	23	0	36	185	46	0	14	206	30	0	32	356	13	0	1068
7:45 AM	37	109	23	0	45	186	46	0	20	272	32	0	29	334	17	0	1150
8:00 AM	38	118	18	0	28	138	49	1	15	165	27	0	25	349	28	0	999
8:15 AM	17	101	24	0	27	141	45	0	23	225	20	0	34	300	13	0	970
8:30 AM	28	97	17	1	51	154	35	4	21	191	31	0	16	212	19	0	877
8:45 AM	28	120	22	1	33	149	34	0	14	227	22	0	19	240	36	0	945
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	226	780	141	2	268	1245	346	7	143	1631	198	0	190	2347	156	0	7680
APPROACH %'s :	19.67%	67.89%	12.27%	0.17%	14.36%	66.72%	18.54%	0.38%	7.25%	82.71%	10.04%	0.00%	7.06%	87.15%	5.79%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	119	428	88	0	136	650	186	1	72	868	109	0	120	1339	71	0	4187
PEAK HR FACTOR :	0.783	0.907	0.917	0.000	0.756	0.874	0.949	0.250	0.783	0.798	0.852	0.000	0.882	0.940	0.634	0.000	0.910
	0.912				0.878				0.809				0.951				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	43	222	30	1	35	137	36	2	29	305	24	0	30	235	40	1	1170
4:15 PM	22	158	48	3	29	115	44	3	16	338	39	0	44	216	28	0	1103
4:30 PM	44	188	32	3	29	141	31	5	24	301	24	1	28	190	20	0	1061
4:45 PM	39	204	33	0	25	127	34	1	29	302	31	0	35	208	29	0	1097
5:00 PM	32	198	44	2	43	148	41	5	20	307	38	0	29	214	33	1	1155
5:15 PM	36	213	45	2	35	131	43	3	29	293	23	1	34	257	29	1	1175
5:30 PM	53	207	53	1	25	132	37	3	26	305	28	0	30	251	32	0	1183
5:45 PM	40	185	37	1	31	136	51	4	26	283	41	0	30	248	24	1	1138
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	309	1575	322	13	252	1067	317	26	199	2434	248	2	260	1819	235	4	9082
APPROACH %'s :	13.93%	70.98%	14.51%	0.59%	15.16%	64.20%	19.07%	1.56%	6.90%	84.43%	8.60%	0.07%	11.22%	78.47%	10.14%	0.17%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	161	803	179	6	134	547	172	15	101	1188	130	1	123	970	118	3	4651
PEAK HR FACTOR :	0.759	0.942	0.844	0.750	0.779	0.924	0.843	0.750	0.871	0.967	0.793	0.250	0.904	0.944	0.894	0.750	0.983
	0.915				0.916				0.973				0.945				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Paramount Blvd & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05307-095
Date: 5/23/2018

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				Carson St				Carson St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	9	34	10	0	54	107	37	2	25	151	10	4	19	120	12	1	595
7:15 AM	6	31	15	0	72	138	45	2	23	211	16	6	27	201	28	2	823
7:30 AM	5	48	20	0	82	151	54	5	27	202	17	3	23	227	11	1	876
7:45 AM	9	49	17	0	70	140	58	3	38	216	15	6	39	248	26	1	935
8:00 AM	14	45	26	0	54	108	65	0	33	185	13	9	26	246	26	0	850
8:15 AM	11	39	23	0	52	100	49	3	28	219	16	2	39	243	33	2	859
8:30 AM	11	45	20	0	65	118	48	2	30	268	13	2	24	239	20	2	907
8:45 AM	6	40	30	0	53	67	46	1	41	216	19	8	29	209	32	1	798
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	71	331	161	0	502	929	402	18	245	1668	119	40	226	1733	188	10	6643
APPROACH %'s :	12.61%	58.79%	28.60%	0.00%	27.12%	50.19%	21.72%	0.97%	11.82%	80.50%	5.74%	1.93%	10.48%	80.34%	8.72%	0.46%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	45	178	86	0	241	466	220	8	129	888	57	19	128	976	105	5	3551
PEAK HR FACTOR :	0.804	0.908	0.827	0.000	0.861	0.832	0.846	0.667	0.849	0.828	0.891	0.528	0.821	0.984	0.795	0.625	0.949
	0.909				0.863				0.873				0.957				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	26	170	34	0	37	82	51	2	49	268	12	7	26	226	53	2	1045
4:15 PM	24	113	31	0	44	69	32	3	62	316	15	8	33	218	54	5	1027
4:30 PM	24	141	38	0	37	89	38	2	55	306	12	10	23	240	64	1	1080
4:45 PM	34	134	39	0	45	70	49	1	58	355	14	4	22	217	61	1	1104
5:00 PM	26	158	36	0	52	81	38	1	57	340	17	7	34	243	55	1	1146
5:15 PM	27	159	50	0	58	95	46	3	57	343	18	13	26	224	81	3	1203
5:30 PM	33	147	32	0	62	76	41	1	68	371	16	10	20	239	85	1	1202
5:45 PM	26	128	39	0	36	93	39	5	70	318	8	8	33	228	81	2	1114
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	220	1150	299	0	371	655	334	18	476	2617	112	67	217	1835	534	16	8921
APPROACH %'s :	13.18%	68.90%	17.91%	0.00%	26.92%	47.53%	24.24%	1.31%	14.55%	79.98%	3.42%	2.05%	8.34%	70.52%	20.52%	0.61%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	112	592	157	0	208	345	164	10	252	1372	59	38	113	934	302	7	4665
PEAK HR FACTOR :	0.848	0.931	0.785	0.000	0.839	0.908	0.891	0.500	0.900	0.925	0.819	0.731	0.831	0.961	0.888	0.583	0.969
	0.912				0.900				0.925				0.983				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Downey Ave & Alondra Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-101
Date: 5/23/2018

Total

NS/EW Streets:	Downey Ave				Downey Ave				Alondra Blvd				Alondra Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	19	95	7	0	15	124	10	0	11	66	14	0	19	168	21	0	569
7:15 AM	24	156	24	0	21	169	22	0	28	77	23	0	53	184	29	1	811
7:30 AM	23	178	26	0	27	160	27	1	48	113	17	0	56	190	47	0	913
7:45 AM	40	142	38	0	47	155	35	0	24	144	30	1	50	234	51	1	992
8:00 AM	21	89	20	0	54	178	29	0	13	116	18	0	35	166	30	1	770
8:15 AM	27	80	14	0	27	116	15	0	12	112	18	1	35	150	39	0	646
8:30 AM	18	82	16	0	22	108	10	0	6	79	11	3	37	138	17	0	547
8:45 AM	22	74	25	2	28	90	12	0	13	107	13	1	23	143	24	0	577
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	194	896	170	2	241	1100	160	1	155	814	144	6	308	1373	258	3	5825
APPROACH %'s :	15.37%	71.00%	13.47%	0.16%	16.05%	73.24%	10.65%	0.07%	13.85%	72.74%	12.87%	0.54%	15.86%	70.70%	13.29%	0.15%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	108	565	108	0	149	662	113	1	113	450	88	1	194	774	157	3	3486
PEAK HR FACTOR :	0.675	0.794	0.711	0.000	0.690	0.930	0.807	0.250	0.589	0.781	0.733	0.250	0.866	0.827	0.770	0.750	0.879
	0.860				0.886				0.819				0.839				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	26	122	40	0	35	149	26	4	35	197	29	2	30	131	38	0	864
4:15 PM	25	126	29	1	41	118	14	2	20	204	17	0	35	155	27	1	815
4:30 PM	37	120	29	0	39	145	20	1	32	220	20	2	40	149	30	1	885
4:45 PM	29	122	20	0	50	129	18	3	25	200	27	3	34	138	38	0	836
5:00 PM	25	124	33	0	49	122	20	0	27	203	20	1	38	155	38	1	856
5:15 PM	32	148	33	0	44	134	12	1	24	226	24	1	32	155	37	2	905
5:30 PM	30	131	30	0	45	160	22	2	36	213	32	0	33	152	31	0	917
5:45 PM	42	161	41	0	49	162	20	0	33	215	33	1	27	171	38	0	993
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	246	1054	255	1	352	1119	152	13	232	1678	202	10	269	1206	277	5	7071
APPROACH %'s :	15.81%	67.74%	16.39%	0.06%	21.52%	68.40%	9.29%	0.79%	10.93%	79.08%	9.52%	0.47%	15.31%	68.64%	15.77%	0.28%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	129	564	137	0	187	578	74	3	120	857	109	3	130	633	144	3	3671
PEAK HR FACTOR :	0.768	0.876	0.835	0.000	0.954	0.892	0.841	0.375	0.833	0.948	0.826	0.750	0.855	0.925	0.947	0.375	0.924
	0.850				0.911				0.965				0.964				

Prepared by National Data & Surveying Services

Redondo Ave & Spring St

Peak Hour Turning Movement Count

ID: 17-5595-001
City: Long Beach

Day: Wednesday
Date: 09/13/2017

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Redondo Ave — SOUTHBOUND

AM	1	2	5	0	15	AM
NOON	0	0	0	0	0	NOON
PM	3	3	5	0	9	PM
	0.5	1.5	1	0		

Spring St — EASTBOUND

AM	NOON	PM	
1832	0	1457	
0	0	5	0
3	0	4	1
729	0	1085	3
338	0	388	0

Spring St — WESTBOUND

	PM	NOON	AM
0	5	0	10
3	894	0	1296
2	237	0	313
0	0	1	
	1469	0	1021

CONTROL

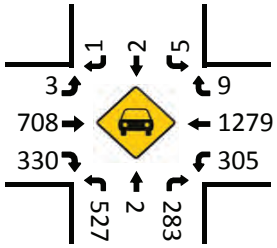
Signalized

TEV	3521	0	3563
	AM	NOON	PM
PHF	0.91		0.89

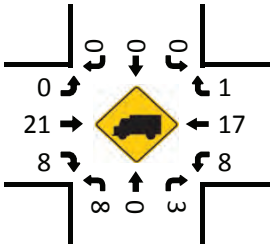
Redondo Ave — NORTHBOUND

	0	2	0.5	1.5		
PM	628	0	555	0	379	PM
NOON	0	0	0	0	0	NOON
AM	653	0	535	2	286	AM

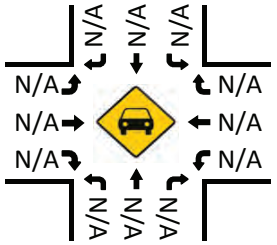
Cars (AM)



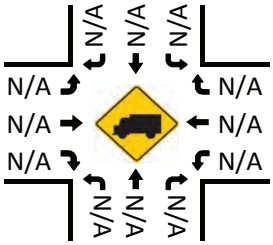
HT (AM)



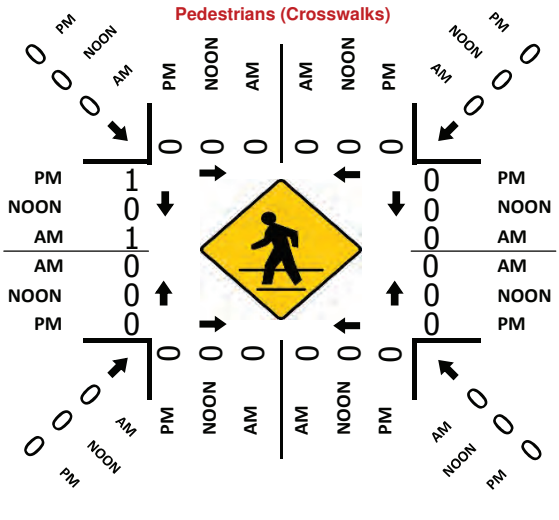
Cars (NOON)



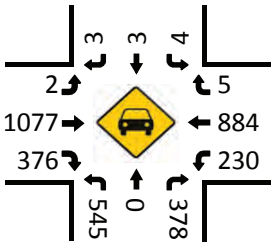
HT (NOON)



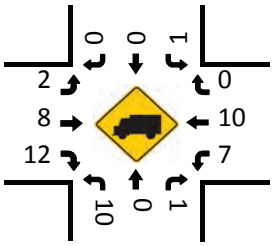
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Redondo Ave & Willow St

Peak Hour Turning Movement Count

ID: 17-5595-002
City: Long Beach

Day: Wednesday
Date: 09/13/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Redondo Ave)

AM	48	358	108	0	1320	AM
NOON	0	0	0	0	0	NOON
PM	124	641	271	0	771	PM
	0	3	2	0		

EASTBOUND (Willow St)

AM	NOON	PM	
1625	0	1365	
2	0	2	0
116	0	66	1
1020	0	1521	3
159	0	285	1
AM	NOON	PM	

WESTBOUND (Willow St)

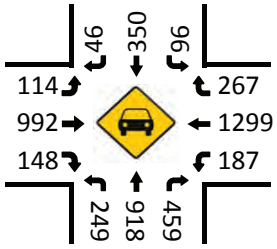
PM	NOON	AM	
122	0	275	1
1030	0	1322	3
247	0	196	2
0	0	0	0
2200	0	1593	
PM	NOON	AM	

NORTHBOUND (Redondo Ave)

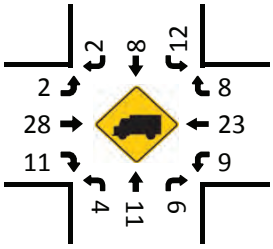
PM	1173	0	209	583	408	PM
NOON	0	0	0	0	0	NOON
AM	714	1	253	929	465	AM
		0	2	3	1	

CONTROL			
Signalized			
TEV	5252	0	5509
	AM	NOON	PM
PHF	0.94		0.94

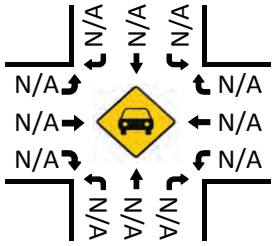
Cars (AM)



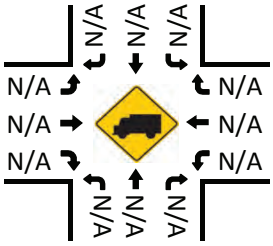
HT (AM)



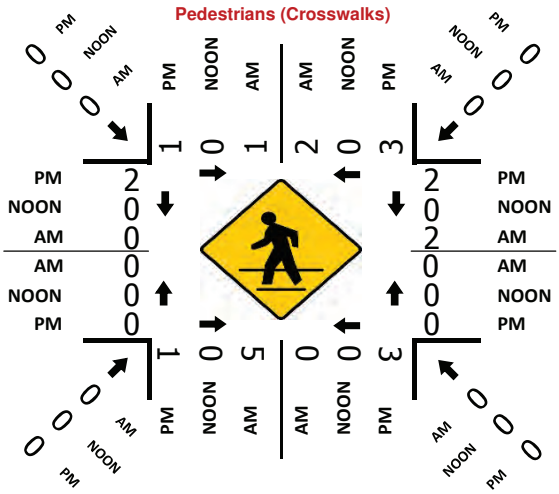
Cars (NOON)



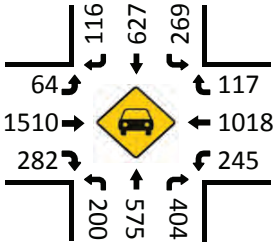
HT (NOON)



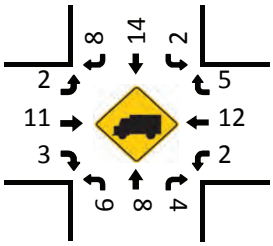
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Redondo Ave & Pacific Coast Hwy (SR-1)

Peak Hour Turning Movement Count

ID: 17-5595-008
City: Long Beach

Day: Wednesday
Date: 09/13/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Redondo Ave — SOUTHBOUND

AM	150	426	88	0	1241	AM
NOON	0	0	0	0	0	NOON
PM	196	813	169	0	958	PM
	1	2	1	0		

Pacific Coast Hwy (SR-1) — EASTBOUND

AM	NOON	PM	
1596	0	1517	
0	0	0	0
221	0	211	1
1032	0	1246	3
10	0	17	0
AM	NOON	PM	

CONTROL

Signalized

	AM	NOON	PM
TEV	4859	0	5294
PHF	0.97		0.99

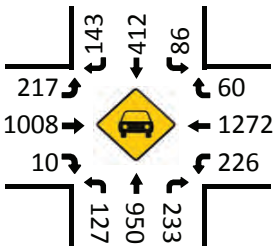
Pacific Coast Hwy (SR-1) — WESTBOUND

	PM	NOON	AM
0	42	0	62
3	1182	0	1318
1	284	0	231
0	0	0	0
	1705	0	1355
	PM	NOON	AM

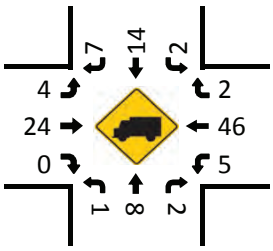
Redondo Ave — NORTHBOUND

	0	1	2	0		
PM	1114	0	139	705	290	PM
NOON	0	0	0	0	0	NOON
AM	667	0	128	958	235	AM

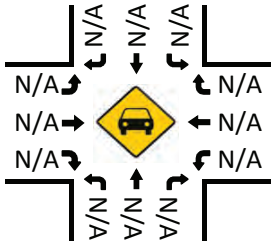
Cars (AM)



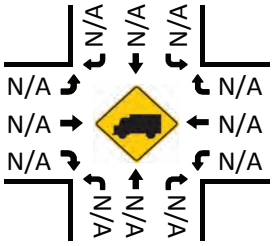
HT (AM)



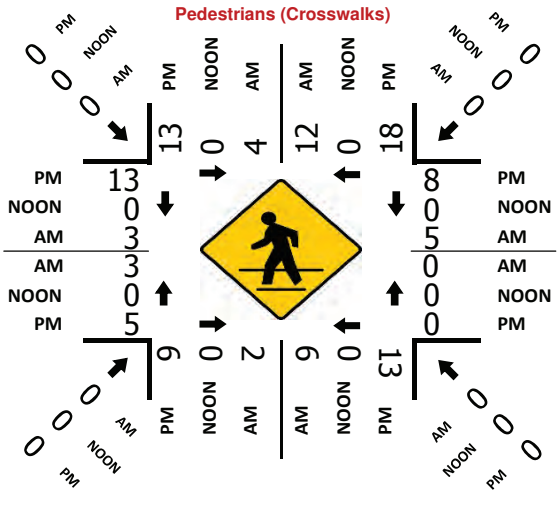
Cars (NOON)



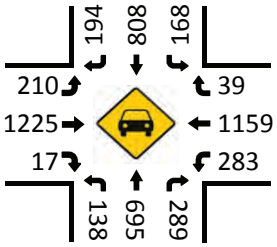
HT (NOON)



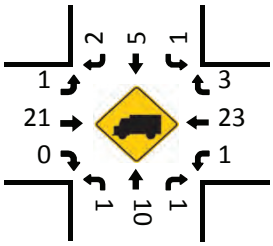
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Redondo Ave & Anaheim St
City: Long Beach
Control: Signalized

Project ID: 18-05307-059
Date: 5/23/2018

Total

NS/EW Streets:	Redondo Ave				Redondo Ave				Anaheim St				Anaheim St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	184	11	0	14	88	12	0	33	195	12	0	11	118	22	0	715
7:15 AM	14	245	18	0	11	121	15	0	49	253	12	0	12	184	19	0	953
7:30 AM	14	261	19	0	12	134	23	0	44	299	27	0	24	248	19	0	1124
7:45 AM	16	271	22	0	14	172	24	0	36	241	34	0	25	253	25	0	1133
8:00 AM	12	234	14	0	12	142	23	0	36	189	28	0	30	186	16	0	922
8:15 AM	14	244	17	0	10	159	20	0	31	181	27	0	24	196	21	0	944
8:30 AM	16	258	13	0	16	174	24	0	38	226	34	0	25	177	24	0	1025
8:45 AM	19	261	19	0	7	170	27	0	31	213	37	0	32	194	14	0	1024
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	120	1958	133	0	96	1160	168	0	298	1797	211	0	183	1556	160	0	7840
APPROACH %'s :	5.43%	88.56%	6.02%	0.00%	6.74%	81.46%	11.80%	0.00%	12.92%	77.93%	9.15%	0.00%	9.64%	81.94%	8.43%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	56	1011	73	0	49	569	85	0	165	982	101	0	91	871	79	0	4132
PEAK HR FACTOR :	0.875	0.933	0.830	0.000	0.875	0.827	0.885	0.000	0.842	0.821	0.743	0.000	0.758	0.861	0.790	0.000	0.912
	0.922				0.837				0.843				0.859				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	22	211	23	0	24	208	18	1	36	254	31	1	39	227	20	0	1115
4:15 PM	22	208	31	0	13	258	21	0	35	248	27	0	38	196	14	0	1111
4:30 PM	19	227	32	0	13	211	28	0	38	251	31	0	34	230	27	0	1141
4:45 PM	17	191	28	0	19	229	25	0	33	264	28	0	50	251	26	0	1161
5:00 PM	16	215	25	0	20	228	22	0	39	275	26	0	50	243	26	0	1185
5:15 PM	16	213	38	0	13	247	23	0	31	257	31	0	40	256	18	0	1183
5:30 PM	20	204	26	0	16	241	15	0	44	251	34	0	49	237	19	0	1156
5:45 PM	18	220	22	0	19	247	16	0	41	279	30	0	34	222	17	0	1165
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	150	1689	225	0	137	1869	168	1	297	2079	238	1	334	1862	167	0	9217
APPROACH %'s :	7.27%	81.83%	10.90%	0.00%	6.30%	85.93%	7.72%	0.05%	11.36%	79.50%	9.10%	0.04%	14.13%	78.80%	7.07%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	70	852	111	0	68	963	76	0	155	1062	121	0	173	958	80	0	4689
PEAK HR FACTOR :	0.875	0.968	0.730	0.000	0.850	0.975	0.826	0.000	0.881	0.952	0.890	0.000	0.865	0.936	0.769	0.000	0.989
	0.967				0.978				0.956				0.949				

National Data & Surveying Services Intersection Turning Movement Count

Location: Redondo Ave & 7th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-058
Date: 5/23/2018

Total

NS/EW Streets:	Redondo Ave				Redondo Ave				7th St				7th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	141	59	0	17	78	25	0	29	260	6	0	18	237	12	0	894
7:15 AM	13	179	73	0	19	88	22	0	42	326	7	0	19	281	13	0	1082
7:30 AM	14	213	38	0	19	113	31	0	38	318	8	0	19	326	21	0	1158
7:45 AM	14	216	33	0	14	187	39	0	45	282	16	0	43	310	20	0	1219
8:00 AM	15	183	62	0	17	128	31	0	42	271	15	0	30	306	14	0	1114
8:15 AM	10	208	41	0	15	130	29	0	39	280	11	0	27	325	15	0	1130
8:30 AM	18	202	49	0	15	148	27	0	52	269	9	0	26	311	23	0	1149
8:45 AM	8	186	49	0	16	162	30	0	50	261	19	0	34	316	23	0	1154
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	104	1528	404	0	132	1034	234	0	337	2267	91	0	216	2412	141	0	8900
APPROACH %'s :	5.11%	75.05%	19.84%	0.00%	9.43%	73.86%	16.71%	0.00%	12.50%	84.12%	3.38%	0.00%	7.80%	87.11%	5.09%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	53	820	174	0	65	558	130	0	164	1151	50	0	119	1267	70	0	4621
PEAK HR FACTOR :	0.883	0.949	0.702	0.000	0.855	0.746	0.833	0.000	0.911	0.905	0.781	0.000	0.692	0.972	0.833	0.000	0.948
	0.988				0.784				0.938				0.976				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	13	170	26	0	10	194	29	0	31	224	11	0	39	248	19	0	1014
4:15 PM	15	210	32	0	16	220	36	0	55	252	16	0	41	222	20	0	1135
4:30 PM	15	171	27	0	18	193	35	0	31	237	19	0	44	228	19	0	1037
4:45 PM	13	151	28	0	15	215	27	0	50	258	11	0	38	241	19	0	1066
5:00 PM	16	203	34	0	12	215	43	0	54	261	13	0	46	264	20	0	1181
5:15 PM	14	167	33	0	12	221	31	0	51	277	14	0	42	225	13	0	1100
5:30 PM	9	188	41	0	19	224	38	0	37	281	15	0	35	256	18	0	1161
5:45 PM	11	180	49	0	22	214	30	0	48	277	22	0	33	271	14	0	1171
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	106	1440	270	0	124	1696	269	0	357	2067	121	0	318	1955	142	0	8865
APPROACH %'s :	5.84%	79.30%	14.87%	0.00%	5.94%	81.19%	12.88%	0.00%	14.03%	81.22%	4.75%	0.00%	13.17%	80.95%	5.88%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	50	738	157	0	65	874	142	0	190	1096	64	0	156	1016	65	0	4613
PEAK HR FACTOR :	0.781	0.909	0.801	0.000	0.739	0.975	0.826	0.000	0.880	0.975	0.727	0.000	0.848	0.937	0.813	0.000	0.977
	0.934				0.962				0.973				0.937				

National Data & Surveying Services Intersection Turning Movement Count

Location: Redondo Ave & 3rd St
City: Long Beach
Control: Signalized

Project ID: 18-05307-057
Date: 5/23/2018

Total

NS/EW Streets:	Redondo Ave				Redondo Ave				3rd St				3rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	115	1	0	2	53	15	0	29	12	4	0	1	11	13	0	258
7:15 AM	3	115	2	0	8	72	7	0	29	12	2	0	3	10	17	0	280
7:30 AM	6	138	3	0	8	69	13	0	35	25	4	0	4	12	9	0	326
7:45 AM	1	133	4	0	15	160	26	0	26	25	8	0	5	26	13	0	442
8:00 AM	6	129	2	0	6	102	20	0	39	19	7	0	3	18	7	0	358
8:15 AM	5	152	4	0	8	97	11	0	28	21	13	0	3	23	16	0	381
8:30 AM	5	139	3	0	12	106	22	0	34	17	7	0	2	15	12	0	374
8:45 AM	5	145	4	0	13	129	38	0	41	26	10	0	0	25	16	0	452
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	33	1066	23	0	72	788	152	0	261	157	55	0	21	140	103	0	2871
APPROACH %'s :	2.94%	95.01%	2.05%	0.00%	7.11%	77.87%	15.02%	0.00%	55.18%	33.19%	11.63%	0.00%	7.95%	53.03%	39.02%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	21	565	13	0	39	434	91	0	142	83	37	0	8	81	51	0	1565
PEAK HR FACTOR :	0.875	0.929	0.813	0.000	0.750	0.841	0.599	0.000	0.866	0.798	0.712	0.000	0.667	0.810	0.797	0.000	0.866
	0.930				0.783				0.851				0.833				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	166	3	0	10	140	32	0	19	17	7	0	3	17	5	0	425
4:15 PM	2	151	2	0	15	160	28	0	30	23	1	0	4	19	12	0	447
4:30 PM	6	125	5	0	15	166	27	0	23	30	9	0	3	15	18	0	442
4:45 PM	7	137	1	0	15	162	21	0	18	38	5	0	4	22	8	0	438
5:00 PM	3	170	3	0	13	158	26	0	23	23	4	0	0	17	24	0	464
5:15 PM	8	131	2	0	18	177	27	0	23	29	5	0	5	32	15	0	472
5:30 PM	11	144	2	0	7	159	31	0	28	18	9	0	5	27	8	0	449
5:45 PM	4	137	2	0	16	163	21	0	31	19	3	0	2	14	16	0	428
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	47	1161	20	0	109	1285	213	0	195	197	43	0	26	163	106	0	3565
APPROACH %'s :	3.83%	94.54%	1.63%	0.00%	6.78%	79.96%	13.25%	0.00%	44.83%	45.29%	9.89%	0.00%	8.81%	55.25%	35.93%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	29	582	8	0	53	656	105	0	92	108	23	0	14	98	55	0	1823
PEAK HR FACTOR :	0.659	0.856	0.667	0.000	0.736	0.927	0.847	0.000	0.821	0.711	0.639	0.000	0.700	0.766	0.573	0.000	0.966
	0.879				0.917				0.914				0.803				

National Data & Surveying Services Intersection Turning Movement Count

Location: Redondo Ave & Ocean Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-056
Date: 5/23/2018

Total

NS/EW Streets:	Redondo Ave				Redondo Ave				Ocean Blvd				Ocean Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	22	0	13	0	10	148	0	0	0	261	20	0	474
7:15 AM	0	0	0	0	20	0	27	0	4	136	0	0	0	276	17	0	480
7:30 AM	0	0	0	0	16	0	18	0	14	176	0	0	0	275	27	0	526
7:45 AM	0	0	0	0	33	0	23	0	18	197	0	0	0	282	26	0	579
8:00 AM	0	0	0	0	28	0	20	0	12	164	0	0	0	267	40	0	531
8:15 AM	0	0	0	0	31	0	21	0	17	169	0	0	0	232	23	0	493
8:30 AM	0	0	0	0	39	0	13	0	17	178	0	0	0	248	23	0	518
8:45 AM	0	0	0	0	33	0	19	0	14	147	0	0	0	234	24	0	471
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	222	0	154	0	106	1315	0	0	0	2075	200	0	4072
APPROACH %'s :					59.04%	0.00%	40.96%	0.00%	7.46%	92.54%	0.00%	0.00%	0.00%	91.21%	8.79%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	108	0	82	0	61	706	0	0	0	1056	116	0	2129
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.818	0.000	0.891	0.000	0.847	0.896	0.000	0.000	0.000	0.936	0.725	0.000	0.919
					0.848				0.892				0.951				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	40	0	14	0	20	303	0	0	0	181	33	0	591
4:15 PM	0	0	0	0	52	0	14	0	26	335	0	0	0	203	37	0	667
4:30 PM	0	0	0	0	55	0	32	0	26	368	0	0	0	198	26	0	705
4:45 PM	0	0	0	0	57	0	17	0	25	387	0	0	0	186	25	0	697
5:00 PM	0	0	0	0	45	0	18	0	35	334	0	0	0	178	30	0	640
5:15 PM	0	0	0	0	52	0	24	0	31	342	0	0	0	218	25	0	692
5:30 PM	0	0	0	0	60	0	23	0	18	319	0	0	0	198	36	0	654
5:45 PM	0	0	0	0	44	0	23	0	31	333	0	0	0	156	32	0	619
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	405	0	165	0	212	2721	0	0	0	1518	244	0	5265
APPROACH %'s :					71.05%	0.00%	28.95%	0.00%	7.23%	92.77%	0.00%	0.00%	0.00%	86.15%	13.85%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	209	0	91	0	117	1431	0	0	0	780	106	0	2734
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.917	0.000	0.711	0.000	0.836	0.924	0.000	0.000	0.000	0.894	0.883	0.000	0.970
					0.862				0.939				0.912				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & Del Amo Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-063
Date: 5/10/2018

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	3	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	20	76	16	0	20	192	32	5	17	176	52	1	33	224	22	0	886
7:15 AM	32	115	24	0	30	214	23	3	39	230	56	0	46	256	33	0	1101
7:30 AM	39	128	13	0	49	247	35	11	27	265	48	2	35	217	47	0	1163
7:45 AM	52	147	20	0	41	263	35	4	29	230	60	1	44	268	52	0	1246
8:00 AM	45	134	29	0	44	208	32	9	29	170	48	1	48	265	57	0	1119
8:15 AM	39	146	24	0	36	213	29	2	26	199	58	3	49	270	52	0	1146
8:30 AM	32	92	25	0	45	213	34	5	29	221	60	4	44	229	44	0	1077
8:45 AM	37	161	31	0	41	192	24	2	45	236	47	1	46	203	48	0	1114
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	296	999	182	0	306	1742	244	41	241	1727	429	13	345	1932	355	0	8852
APPROACH %'s :	20.04%	67.64%	12.32%	0.00%	13.12%	74.67%	10.46%	1.76%	10.00%	71.66%	17.80%	0.54%	13.11%	73.40%	13.49%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	175	555	86	0	170	931	131	26	111	864	214	7	176	1020	208	0	4674
PEAK HR FACTOR :	0.841	0.944	0.741	0.000	0.867	0.885	0.936	0.591	0.957	0.815	0.892	0.583	0.898	0.944	0.912	0.000	0.938
	0.932				0.917				0.874				0.946				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	3	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	65	263	64	0	58	157	54	7	55	287	36	3	56	244	75	0	1424
4:15 PM	80	276	53	0	57	156	43	5	50	274	34	3	54	234	77	0	1396
4:30 PM	56	241	62	0	63	168	40	3	58	288	31	3	59	215	76	0	1363
4:45 PM	65	271	60	0	71	136	41	7	59	286	45	2	31	243	67	0	1384
5:00 PM	58	257	78	0	50	189	41	4	60	283	40	5	55	205	67	0	1392
5:15 PM	81	275	60	0	61	180	44	11	39	272	43	1	57	248	82	0	1454
5:30 PM	67	274	69	0	47	178	53	8	56	261	41	1	70	248	71	0	1444
5:45 PM	77	282	57	0	61	150	42	6	56	287	23	3	49	237	80	0	1410
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	549	2139	503	0	468	1314	358	51	433	2238	293	21	431	1874	595	0	11267
APPROACH %'s :	17.20%	67.03%	15.76%	0.00%	21.36%	59.97%	16.34%	2.33%	14.51%	74.97%	9.82%	0.70%	14.86%	64.62%	20.52%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	283	1088	264	0	219	697	180	29	211	1103	147	10	231	938	300	0	5700
PEAK HR FACTOR :	0.873	0.965	0.846	0.000	0.898	0.922	0.849	0.659	0.879	0.961	0.855	0.500	0.825	0.946	0.915	0.000	0.980
	0.983				0.950				0.948				0.944				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05307-064
Date: 5/10/2018

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				Carson St				Carson St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	1	4	0	0	2	3	1	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	31	87	29	0	27	264	18	0	8	127	48	0	50	109	2	0	800
7:15 AM	48	136	28	0	27	276	23	0	12	167	75	0	62	196	7	0	1057
7:30 AM	47	160	33	0	27	364	34	0	17	208	68	0	55	210	3	0	1226
7:45 AM	81	159	34	0	24	300	35	0	22	150	82	0	55	228	5	0	1175
8:00 AM	71	143	43	0	27	254	34	0	21	159	48	0	65	237	10	0	1112
8:15 AM	95	179	99	0	30	255	50	0	26	170	49	0	52	211	12	0	1228
8:30 AM	69	123	51	0	42	303	36	0	17	214	56	0	51	192	14	0	1168
8:45 AM	48	176	35	0	25	224	33	0	29	176	63	0	73	214	13	0	1109
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	490	1163	352	0	229	2240	263	0	152	1371	489	0	463	1597	66	0	8875
APPROACH %'s :	24.44%	58.00%	17.56%	0.00%	8.38%	81.99%	9.63%	0.00%	7.55%	68.14%	24.30%	0.00%	21.78%	75.12%	3.10%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	294	641	209	0	108	1173	153	0	86	687	247	0	227	886	30	0	4741
PEAK HR FACTOR :	0.774	0.895	0.528	0.000	0.900	0.806	0.765	0.000	0.827	0.826	0.753	0.000	0.873	0.935	0.625	0.000	0.965
	0.767				0.844				0.870				0.916				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	1	4	0	0	2	3	1	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	76	301	69	0	22	215	21	0	70	272	65	0	37	184	16	0	1348
4:15 PM	77	307	76	0	26	186	37	0	48	225	67	0	47	179	18	0	1293
4:30 PM	61	307	58	0	20	217	29	0	81	289	70	0	41	163	15	0	1351
4:45 PM	76	344	92	0	30	172	29	0	66	283	68	0	51	187	15	0	1413
5:00 PM	70	297	92	0	32	222	28	0	77	320	77	0	49	181	22	0	1467
5:15 PM	93	386	94	0	20	225	25	0	75	313	64	0	58	184	13	0	1550
5:30 PM	66	310	97	0	24	217	30	0	72	295	82	0	43	157	17	0	1410
5:45 PM	98	359	91	0	26	174	24	0	54	263	64	0	71	184	19	0	1427
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	617	2611	669	0	200	1628	223	0	543	2260	557	0	397	1419	135	0	11259
APPROACH %'s :	15.83%	67.00%	17.17%	0.00%	9.75%	79.38%	10.87%	0.00%	16.16%	67.26%	16.58%	0.00%	20.35%	72.73%	6.92%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	327	1352	374	0	102	838	107	0	278	1191	287	0	221	706	71	0	5854
PEAK HR FACTOR :	0.834	0.876	0.964	0.000	0.797	0.931	0.892	0.000	0.903	0.930	0.875	0.000	0.778	0.959	0.807	0.000	0.944
	0.896				0.928				0.926				0.911				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & Spring St
City: Long Beach
Control: Signalized

Project ID: 18-05307-065
Date: 5/9/2018

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				Spring St				Spring St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	4	1	0	2	3	2	0	2	3	0	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	27	279	48	1	49	287	77	1	42	63	6	0	67	222	31	1	1201
7:15 AM	27	285	58	0	60	299	116	2	67	107	7	0	50	328	43	0	1449
7:30 AM	22	337	75	4	80	319	158	2	76	120	8	0	56	325	40	0	1622
7:45 AM	54	366	87	0	54	324	152	4	98	125	2	0	51	354	69	0	1740
8:00 AM	41	289	55	0	45	362	145	2	71	64	5	0	51	370	48	0	1548
8:15 AM	55	288	67	0	42	283	107	0	80	111	10	0	50	268	33	0	1394
8:30 AM	47	312	53	6	52	315	119	5	63	113	13	0	34	272	37	0	1441
8:45 AM	49	275	46	0	48	247	94	1	74	84	11	0	50	330	42	1	1352
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	322	2431	489	11	430	2436	968	17	571	787	62	0	409	2469	343	2	11747
APPROACH %'s :	9.90%	74.73%	15.03%	0.34%	11.17%	63.26%	25.14%	0.44%	40.21%	55.42%	4.37%	0.00%	12.69%	76.61%	10.64%	0.06%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	144	1277	275	4	239	1304	571	10	312	416	22	0	208	1377	200	0	6359
PEAK HR FACTOR :	0.667	0.872	0.790	0.250	0.747	0.901	0.903	0.625	0.796	0.832	0.688	0.000	0.929	0.930	0.725	0.000	0.914
	0.838				0.950				0.833				0.941				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	4	1	0	2	3	2	0	2	3	0	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	344	56	1	50	367	86	5	122	275	31	0	65	158	45	0	1609
4:15 PM	10	322	43	4	48	359	73	3	124	288	39	0	58	100	48	0	1519
4:30 PM	8	311	31	3	54	436	90	7	144	299	56	0	43	131	50	0	1663
4:45 PM	7	348	54	6	42	341	79	6	164	314	39	0	60	125	62	0	1647
5:00 PM	11	354	46	7	56	412	112	13	159	316	53	0	70	120	82	0	1811
5:15 PM	8	379	58	1	57	372	100	8	173	356	50	0	62	128	58	0	1810
5:30 PM	5	399	46	2	66	461	115	10	176	291	40	0	54	156	69	0	1890
5:45 PM	9	422	54	5	37	322	91	5	130	246	48	0	43	98	48	0	1558
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	62	2879	388	29	410	3070	746	57	1192	2385	356	0	455	1016	462	0	13507
APPROACH %'s :	1.85%	85.74%	11.55%	0.86%	9.57%	71.68%	17.42%	1.33%	30.31%	60.64%	9.05%	0.00%	23.54%	52.56%	23.90%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	31	1480	204	16	221	1586	406	37	672	1277	182	0	246	529	271	0	7158
PEAK HR FACTOR :	0.705	0.927	0.879	0.571	0.837	0.860	0.883	0.712	0.955	0.897	0.858	0.000	0.879	0.848	0.826	0.000	0.947
	0.957				0.863				0.920				0.937				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & I-405 WB Ramps
City: Long Beach
Control: No Control

Project ID: 18-05723-005
Date: 11/1/2018

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				I-405 WB Ramps				I-405 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2.5	1.5	0	0	2.5	1.5	0	0	0	1	0	0	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	227	227	0	0	190	115	0	0	0	45	0	0	0	125	0	929
7:15 AM	0	306	268	0	0	219	105	0	0	0	42	0	0	0	118	0	1058
7:30 AM	0	317	219	0	0	270	133	0	0	0	75	0	0	0	121	0	1135
7:45 AM	0	354	226	0	0	278	97	0	0	0	48	0	0	0	124	0	1127
8:00 AM	0	259	236	0	0	242	133	0	0	0	56	0	0	0	112	0	1038
8:15 AM	0	347	196	0	0	229	97	0	0	0	62	0	0	0	124	0	1055
8:30 AM	0	349	197	0	0	272	98	0	0	0	69	0	0	0	111	0	1096
8:45 AM	0	330	202	0	0	265	97	0	0	0	80	0	0	0	110	0	1084
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2489	1771	0	0	1965	875	0	0	0	477	0	0	0	945	0	8522
APPROACH %'s :	0.00%	58.43%	41.57%	0.00%	0.00%	69.19%	30.81%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	**07:15 AM - 08:15 AM**																TOTAL
PEAK HR VOL :	0	1236	949	0	0	1009	468	0	0	0	221	0	0	0	475	0	4358
PEAK HR FACTOR :	0.000	0.873	0.885	0.000	0.000	0.907	0.880	0.000	0.000	0.000	0.737	0.000	0.000	0.000	0.958	0.000	0.960
	0.942				0.916				0.737				0.958				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2.5	1.5	0	0	2.5	1.5	0	0	0	1	0	0	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	278	179	0	0	361	146	0	0	0	60	0	0	0	96	0	1120
4:15 PM	0	280	147	0	0	332	160	0	0	0	71	0	0	0	103	0	1093
4:30 PM	0	256	174	0	0	363	149	0	0	0	83	0	0	0	107	0	1132
4:45 PM	0	308	140	0	0	324	130	0	0	0	86	0	0	0	123	0	1111
5:00 PM	0	306	170	0	0	363	170	0	0	0	75	0	0	0	117	0	1201
5:15 PM	0	365	161	0	0	373	110	0	0	0	65	0	0	0	118	0	1192
5:30 PM	0	336	166	0	0	354	124	0	0	0	64	0	0	0	99	0	1143
5:45 PM	0	383	147	0	0	331	124	0	0	0	73	0	0	0	107	0	1165
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2512	1284	0	0	2801	1113	0	0	0	577	0	0	0	870	0	9157
APPROACH %'s :	0.00%	66.17%	33.83%	0.00%	0.00%	71.56%	28.44%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	**05:00 PM - 06:00 PM**																TOTAL
PEAK HR VOL :	0	1390	644	0	0	1421	528	0	0	0	277	0	0	0	441	0	4701
PEAK HR FACTOR :	0.000	0.907	0.947	0.000	0.000	0.952	0.776	0.000	0.000	0.000	0.923	0.000	0.000	0.000	0.934	0.000	0.979
	0.959				0.914				0.923				0.934				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & I-405 EB Ramps
City: Long Beach
Control: No Control

Project ID: 18-05723-006
Date: 11/1/2018

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				I-405 EB Ramps				I-405 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	4	0	0	0	2.5	1.5	0	0	0	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	438	4	0	0	156	67	0	0	0	127	0	0	0	1	0	793
7:15 AM	0	558	3	0	0	209	69	0	0	0	160	0	0	0	1	0	1000
7:30 AM	0	539	1	0	0	247	76	0	0	0	191	0	0	0	2	0	1056
7:45 AM	0	594	5	0	0	263	83	0	0	0	225	0	0	0	3	0	1173
8:00 AM	0	488	3	0	0	213	63	0	0	0	198	0	0	0	3	0	968
8:15 AM	0	540	1	0	0	228	78	0	0	0	172	0	0	0	2	0	1021
8:30 AM	0	547	3	0	0	233	93	0	0	0	186	0	0	0	1	0	1063
8:45 AM	0	526	2	0	0	278	73	0	0	0	195	0	0	0	2	0	1076
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4230	22	0	0	1827	602	0	0	0	1454	0	0	0	15	0	8150
APPROACH %'s :	0.00%	99.48%	0.52%	0.00%	0.00%	75.22%	24.78%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	2169	12	0	0	937	317	0	0	0	781	0	0	0	9	0	4225
PEAK HR FACTOR :	0.000	0.913	0.600	0.000	0.000	0.891	0.852	0.000	0.000	0.000	0.868	0.000	0.000	0.000	0.750	0.000	0.900
	0.910				0.906				0.868				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	4	0	0	0	2.5	1.5	0	0	0	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	449	8	0	0	312	114	0	0	0	130	0	0	0	6	0	1019
4:15 PM	0	441	4	0	0	282	137	0	0	0	147	0	0	0	1	0	1012
4:30 PM	0	433	8	0	0	328	102	0	0	0	135	0	0	0	2	0	1008
4:45 PM	0	435	3	0	0	304	125	0	0	0	190	0	0	0	3	0	1060
5:00 PM	0	466	5	0	0	303	116	0	0	0	141	0	0	0	4	0	1035
5:15 PM	0	505	7	0	0	323	134	0	0	0	144	0	0	0	2	0	1115
5:30 PM	0	493	5	0	0	282	120	0	0	0	180	0	0	0	3	0	1083
5:45 PM	0	546	3	0	0	289	121	0	0	0	155	0	0	0	2	0	1116
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3768	43	0	0	2423	969	0	0	0	1222	0	0	0	23	0	8448
APPROACH %'s :	0.00%	98.87%	1.13%	0.00%	0.00%	71.43%	28.57%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	2010	20	0	0	1197	491	0	0	0	620	0	0	0	11	0	4349
PEAK HR FACTOR :	0.000	0.920	0.714	0.000	0.000	0.926	0.916	0.000	0.000	0.000	0.861	0.000	0.000	0.000	0.688	0.000	0.974
	0.924				0.923				0.861				0.688				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & Willow St
City: Long Beach
Control: Signalized

Project ID: 18-05723-106
Date: 11/1/2018

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	4	0	0	2	3	0	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	38	288	43	0	16	207	72	5	30	194	12	1	10	239	155	1	1311
7:15 AM	45	333	53	0	18	254	68	6	35	307	24	1	15	295	187	3	1644
7:30 AM	52	365	51	0	31	317	111	1	32	285	44	2	17	354	144	1	1807
7:45 AM	51	326	44	0	30	306	121	9	51	290	39	3	23	393	182	1	1869
8:00 AM	73	311	59	0	22	268	118	8	24	223	22	2	17	346	147	5	1645
8:15 AM	63	276	29	0	28	259	90	4	33	252	41	3	23	374	209	2	1686
8:30 AM	60	322	37	0	14	306	114	2	41	272	36	5	27	206	193	2	1637
8:45 AM	67	307	49	0	19	317	128	4	27	239	45	6	23	330	171	3	1735
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	449	2528	365	0	178	2234	822	39	273	2062	263	23	155	2537	1388	18	13334
APPROACH %'s :	13.44%	75.64%	10.92%	0.00%	5.44%	68.26%	25.11%	1.19%	10.42%	78.67%	10.03%	0.88%	3.78%	61.91%	33.87%	0.44%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	239	1278	183	0	111	1150	440	22	140	1050	146	10	80	1467	682	9	7007
PEAK HR FACTOR :	0.818	0.875	0.775	0.000	0.895	0.907	0.909	0.611	0.686	0.905	0.830	0.833	0.870	0.933	0.816	0.450	0.937
	0.908				0.924				0.879				0.920				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	4	0	0	2	3	0	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	56	299	44	0	37	345	64	13	56	365	67	5	22	191	100	10	1674
4:15 PM	46	241	38	0	37	309	60	4	59	375	87	6	33	229	116	3	1643
4:30 PM	59	267	45	0	38	373	60	10	52	413	59	8	30	172	107	6	1699
4:45 PM	43	251	39	0	28	345	91	11	70	407	68	13	44	216	110	5	1741
5:00 PM	49	277	36	0	31	364	61	6	82	418	90	7	33	209	111	7	1781
5:15 PM	38	323	37	0	25	379	74	9	59	483	62	5	41	243	137	7	1922
5:30 PM	64	299	47	0	28	346	54	14	68	420	78	7	49	286	122	5	1887
5:45 PM	52	258	24	0	24	306	80	8	71	377	69	11	42	241	155	5	1723
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	407	2215	310	0	248	2767	544	75	517	3258	580	62	294	1787	958	48	14070
APPROACH %'s :	13.88%	75.55%	10.57%	0.00%	6.82%	76.14%	14.97%	2.06%	11.70%	73.76%	13.13%	1.40%	9.52%	57.89%	31.03%	1.55%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	194	1150	159	0	112	1434	280	40	279	1728	298	32	167	954	480	24	7331
PEAK HR FACTOR :	0.758	0.890	0.846	0.000	0.903	0.946	0.769	0.714	0.851	0.894	0.828	0.615	0.852	0.834	0.876	0.857	0.954
	0.916				0.958				0.959				0.879				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ximeno Ave & Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 18-05307-072
Date: 5/23/2018

Total

NS/EW Streets:	Ximeno Ave				Ximeno Ave				Pacific Coast Hwy				Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	84	67	1	0	7	58	4	0	18	127	39	1	7	179	9	0	601
7:15 AM	94	82	6	0	13	64	5	0	11	131	84	1	10	162	17	1	681
7:30 AM	114	109	13	0	19	98	7	0	15	183	125	1	12	230	24	0	950
7:45 AM	97	107	9	0	15	96	5	0	22	155	87	0	16	247	18	2	876
8:00 AM	92	91	6	0	8	102	4	0	21	140	75	1	28	260	16	1	845
8:15 AM	75	93	9	0	27	81	8	0	18	162	65	2	20	222	24	0	806
8:30 AM	73	94	7	0	22	79	10	0	26	164	73	3	15	242	35	1	844
8:45 AM	94	111	7	0	22	108	13	0	17	146	85	0	18	169	29	3	822
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	723	754	58	0	133	686	56	0	148	1208	633	9	126	1711	172	8	6425
APPROACH %'s :	47.10%	49.12%	3.78%	0.00%	15.20%	78.40%	6.40%	0.00%	7.41%	60.46%	31.68%	0.45%	6.25%	84.83%	8.53%	0.40%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	378	400	37	0	69	377	24	0	76	640	352	4	76	959	82	3	3477
PEAK HR FACTOR :	0.829	0.917	0.712	0.000	0.639	0.924	0.750	0.000	0.864	0.874	0.704	0.500	0.679	0.922	0.854	0.375	0.915
	0.863				0.948				0.827				0.918				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	96	136	9	0	25	124	12	1	21	206	81	2	12	169	24	3	921
4:15 PM	100	127	18	0	27	139	12	1	19	283	87	1	18	183	39	3	1057
4:30 PM	100	125	19	0	24	158	7	0	19	301	101	1	22	166	31	2	1076
4:45 PM	80	117	15	0	21	132	12	0	33	247	87	1	14	169	32	1	961
5:00 PM	86	141	14	0	33	135	13	0	30	240	101	4	22	163	38	1	1021
5:15 PM	93	135	17	0	26	153	10	0	27	233	91	1	20	148	31	0	985
5:30 PM	102	115	16	0	34	185	12	0	26	242	95	0	22	158	31	0	1038
5:45 PM	80	113	15	0	44	139	4	0	25	214	98	2	16	129	23	1	903
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	737	1009	123	0	234	1165	82	2	200	1966	741	12	146	1285	249	11	7962
APPROACH %'s :	39.43%	53.99%	6.58%	0.00%	15.78%	78.56%	5.53%	0.13%	6.85%	67.35%	25.39%	0.41%	8.63%	75.99%	14.73%	0.65%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	366	510	66	0	105	564	44	1	101	1071	376	7	76	681	140	7	4115
PEAK HR FACTOR :	0.915	0.904	0.868	0.000	0.795	0.892	0.846	0.250	0.765	0.890	0.931	0.438	0.864	0.930	0.897	0.583	0.956
	0.961				0.944				0.921				0.930				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ximeno Ave & 7th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-068
Date: 5/23/2018

Total

NS/EW Streets:	Ximeno Ave				Ximeno Ave				7th St				7th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	51	33	0	10	30	22	0	9	369	3	0	12	248	4	0	798
7:15 AM	9	79	26	0	16	38	27	0	24	408	6	0	4	301	10	0	948
7:30 AM	20	89	21	0	18	41	41	0	45	372	10	0	11	308	16	0	992
7:45 AM	15	71	21	0	34	60	61	0	36	360	10	0	19	319	7	0	1013
8:00 AM	9	81	29	0	9	47	23	0	23	359	5	0	11	341	6	0	943
8:15 AM	4	66	28	0	11	50	14	0	21	359	4	0	21	346	5	0	929
8:30 AM	4	94	37	0	9	52	18	0	20	331	5	0	14	336	6	0	926
8:45 AM	10	74	24	0	10	62	18	0	28	296	7	0	20	298	13	0	860
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	78	605	219	0	117	380	224	0	206	2854	50	0	112	2497	67	0	7409
APPROACH %'s :	8.65%	67.07%	24.28%	0.00%	16.23%	52.70%	31.07%	0.00%	6.62%	91.77%	1.61%	0.00%	4.19%	93.31%	2.50%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	53	320	97	0	77	186	152	0	128	1499	31	0	45	1269	39	0	3896
PEAK HR FACTOR :	0.663	0.899	0.836	0.000	0.566	0.775	0.623	0.000	0.711	0.919	0.775	0.000	0.592	0.930	0.609	0.000	0.962
	0.904				0.669				0.946				0.945				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	91	18	0	12	90	21	0	25	287	2	0	16	306	9	0	883
4:15 PM	11	75	11	0	16	74	31	0	23	270	6	0	18	284	14	0	833
4:30 PM	4	79	17	0	11	107	24	0	32	260	6	0	11	306	11	0	868
4:45 PM	6	59	16	0	11	81	31	0	25	271	5	0	22	302	5	0	834
5:00 PM	6	87	27	0	13	97	19	0	32	272	5	0	21	328	11	0	918
5:15 PM	10	77	18	0	9	93	20	0	19	326	8	0	18	326	8	0	932
5:30 PM	12	81	20	0	13	103	31	0	14	331	8	0	13	315	5	0	946
5:45 PM	5	62	25	0	11	91	33	0	30	313	7	0	22	320	4	0	923
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	60	611	152	0	96	736	210	0	200	2330	47	0	141	2487	67	0	7137
APPROACH %'s :	7.29%	74.24%	18.47%	0.00%	9.21%	70.63%	20.15%	0.00%	7.76%	90.42%	1.82%	0.00%	5.23%	92.28%	2.49%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	33	307	90	0	46	384	103	0	95	1242	28	0	74	1289	28	0	3719
PEAK HR FACTOR :	0.688	0.882	0.833	0.000	0.885	0.932	0.780	0.000	0.742	0.938	0.875	0.000	0.841	0.982	0.636	0.000	0.983
	0.896				0.906				0.967				0.966				

National Data & Surveying Services Intersection Turning Movement Count

Location: Ximeno Ave & 4th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-067
Date: 5/23/2018

Total

NS/EW Streets:	Ximeno Ave				Ximeno Ave				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	52	3	0	12	24	12	0	8	90	1	0	0	45	8	0	257
7:15 AM	2	66	6	0	11	26	10	0	19	129	5	0	2	45	11	0	332
7:30 AM	4	69	5	0	12	35	14	0	20	123	3	0	0	66	18	0	369
7:45 AM	6	66	3	0	19	59	17	0	14	125	12	0	6	59	16	0	402
8:00 AM	6	75	6	0	15	45	13	0	20	107	7	1	3	65	6	0	369
8:15 AM	4	59	6	0	10	42	17	0	22	97	7	0	2	55	13	0	334
8:30 AM	4	82	4	0	14	46	6	0	14	105	6	0	5	52	18	0	356
8:45 AM	5	70	6	0	20	51	14	0	11	109	7	0	4	62	18	0	377
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	33	539	39	0	113	328	103	0	128	885	48	1	22	449	108	0	2796
APPROACH %'s :	5.40%	88.22%	6.38%	0.00%	20.77%	60.29%	18.93%	0.00%	12.05%	83.33%	4.52%	0.09%	3.80%	77.55%	18.65%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	20	269	20	0	56	181	61	0	76	452	29	1	11	245	53	0	1474
PEAK HR FACTOR :	0.833	0.897	0.833	0.000	0.737	0.767	0.897	0.000	0.864	0.904	0.604	0.250	0.458	0.928	0.736	0.000	0.917
	0.888				0.784				0.924				0.920				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	83	3	0	14	70	14	0	22	85	5	0	3	100	10	0	413
4:15 PM	5	57	2	0	7	67	17	0	19	95	3	0	2	85	8	0	367
4:30 PM	10	73	4	0	17	66	25	0	18	102	2	0	1	95	6	0	419
4:45 PM	6	46	8	0	14	74	17	0	13	129	9	0	1	89	14	0	420
5:00 PM	2	75	4	0	18	64	21	0	19	131	3	0	7	111	16	0	471
5:15 PM	4	58	3	0	12	71	20	0	23	117	4	0	9	125	13	0	459
5:30 PM	6	63	3	0	13	82	20	0	21	116	5	0	2	107	16	0	454
5:45 PM	4	63	4	0	11	84	14	0	17	82	12	0	2	110	8	0	411
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	518	31	0	106	578	148	0	152	857	43	0	27	822	91	0	3414
APPROACH %'s :	6.95%	87.80%	5.25%	0.00%	12.74%	69.47%	17.79%	0.00%	14.45%	81.46%	4.09%	0.00%	2.87%	87.45%	9.68%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	18	242	18	0	57	291	78	0	76	493	21	0	19	432	59	0	1804
PEAK HR FACTOR :	0.750	0.807	0.563	0.000	0.792	0.887	0.929	0.000	0.826	0.941	0.583	0.000	0.528	0.864	0.922	0.000	0.958
	0.858				0.926				0.964				0.867				

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

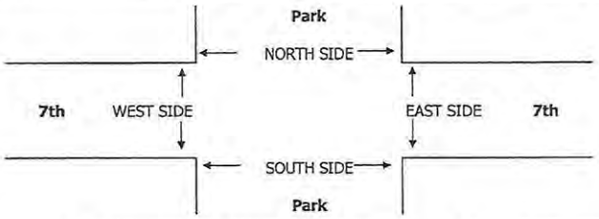
DATE:				
Tue, Nov 15, 16	LOCATION:	Long Beach	PROJECT #:	SC1123
	NORTH & SOUTH:	Park	LOCATION #:	5
	EAST & WEST:	7th	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER ◄ W ▲ N S ▼ E ►

☑ Add U-Turns to Left Turns

		NORTHBOUND Park			SOUTHBOUND Park			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	7	44	105	16	15	9	4	348	6	24	265	23	866	0	0	0	0	0
	7:15 AM	6	73	81	29	23	16	11	383	5	21	301	22	971	0	0	0	0	0
	7:30 AM	2	112	80	28	71	38	25	363	7	32	290	23	1,071	0	0	0	0	0
	7:45 AM	6	64	88	27	39	15	11	413	11	28	251	9	962	0	0	0	0	0
	8:00 AM	5	55	94	12	38	3	5	370	12	31	298	10	933	0	0	0	0	0
	8:15 AM	6	72	102	24	48	0	5	333	16	35	249	16	906	0	0	0	0	0
	8:30 AM	8	95	95	16	67	5	9	345	11	26	319	14	1,010	0	0	0	0	0
	8:45 AM	12	93	74	24	71	5	5	347	16	21	293	11	972	0	0	0	0	0
	VOLUMES	52	608	719	176	372	91	75	2,902	84	218	2,266	128	7,691	0	0	0	0	0
	APPROACH %	4%	44%	52%	28%	58%	14%	2%	95%	3%	8%	87%	5%						
	APP/DEPART	1,379	/	811	639	/	674	3,061	/	3,797	2,612	/	2,409	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	19	304	343	96	171	72	52	1,529	35	112	1,140	64	3,937					
	APPROACH %	3%	46%	52%	28%	50%	21%	3%	95%	2%	9%	87%	5%						
	PEAK HR FACTOR		0.858			0.619			0.929			0.954		0.919					
	APP/DEPART	666	/	420	339	/	318	1,616	/	1,968	1,316	/	1,231	0					
PM	4:00 PM	9	63	67	26	84	9	5	323	17	28	315	25	971	0	0	0	0	0
	4:15 PM	10	88	55	19	69	9	8	356	12	40	345	23	1,034	0	0	0	0	0
	4:30 PM	8	62	70	23	79	9	12	350	11	36	346	14	1,020	0	0	0	0	0
	4:45 PM	8	57	69	19	62	6	6	328	15	43	355	27	995	0	0	0	0	0
	5:00 PM	6	68	48	15	82	5	10	320	20	45	364	19	1,002	0	0	0	0	0
	5:15 PM	7	63	64	22	83	4	6	290	28	45	353	29	994	0	0	0	0	0
	5:30 PM	5	72	50	21	69	12	7	327	27	49	353	24	1,016	0	0	0	0	0
	5:45 PM	4	70	46	21	54	8	10	281	14	46	352	17	923	0	0	0	1	1
	VOLUMES	57	543	469	166	582	62	64	2,575	144	332	2,783	178	7,955	0	0	0	1	1
	APPROACH %	5%	51%	44%	20%	72%	8%	2%	93%	5%	10%	85%	5%						
	APP/DEPART	1,069	/	785	810	/	1,057	2,783	/	3,211	3,293	/	2,902	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	32	275	242	76	292	29	36	1,354	58	164	1,410	83	4,051					
	APPROACH %	6%	50%	44%	19%	74%	7%	2%	94%	4%	10%	85%	5%						
	PEAK HR FACTOR		0.897			0.894			0.963			0.968		0.979					
	APP/DEPART	549	/	394	397	/	514	1,448	/	1,672	1,657	/	1,471	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	9	1	5	29	44	9	1	5	29	44	0	0	0	0	0
	7:15 AM	1	4	5	28	38	0	4	3	25	32	1	0	2	3	6
	7:30 AM	3	4	5	24	36	3	4	4	18	29	0	0	1	6	7
	7:45 AM	2	1	3	0	6	2	0	3	0	5	0	1	0	0	1
	8:00 AM	2	3	4	0	9	1	3	3	0	7	1	0	1	0	2
	8:15 AM	2	3	7	4	16	2	3	6	4	15	0	0	1	0	1
	8:30 AM	1	0	7	7	15	1	0	5	5	11	0	0	2	2	4
	8:45 AM	0	2	2	8	12	0	1	2	6	9	0	1	0	2	3
	TOTAL	20	18	38	100	176	18	16	31	87	152	2	2	7	13	24
PM	4:00 PM	5	3	11	16	35	5	2	9	14	30	0	1	2	2	5
	4:15 PM	7	6	5	15	33	7	6	4	15	32	0	0	1	0	1
	4:30 PM	8	5	6	16	35	7	4	2	15	28	1	1	4	1	7
	4:45 PM	5	2	9	4	20	4	2	7	4	17	1	0	2	0	3
	5:00 PM	11	0	4	13	28	11	0	2	8	21	0	0	2	5	7
	5:15 PM	2	0	10	5	17	1	0	8	5	14	1	0	2	0	3
	5:30 PM	0	0	5	5	10	0	0	5	4	9	0	0	0	1	1
	5:45 PM	2	1	3	4	10	1	0	3	1	5	1	1	0	3	5
	TOTAL	40	17	53	78	188	36	14	40	66	156	4	3	13	12	32

National Data & Surveying Services Intersection Turning Movement Count

Location: Park Ave & 4th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-070
Date: 5/23/2018

Total

NS/EW Streets:	Park Ave				Park Ave				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	65	2	0	11	12	10	0	40	58	4	0	1	39	21	0	264
7:15 AM	3	81	2	0	15	19	9	0	68	69	4	0	0	36	29	0	335
7:30 AM	6	104	4	0	22	29	19	0	55	89	2	0	0	56	52	0	438
7:45 AM	6	94	1	0	41	52	21	0	65	98	4	0	0	43	30	0	455
8:00 AM	4	79	1	0	28	35	17	0	44	91	3	0	0	49	32	0	383
8:15 AM	5	87	0	0	24	38	11	0	47	62	4	0	2	50	26	0	356
8:30 AM	5	90	1	0	27	46	19	0	48	75	16	0	0	44	33	0	404
8:45 AM	6	76	2	0	45	61	19	0	50	92	4	0	0	59	45	0	459
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	36	676	13	0	213	292	125	0	417	634	41	0	3	376	268	0	3094
APPROACH %'s :	4.97%	93.24%	1.79%	0.00%	33.81%	46.35%	19.84%	0.00%	38.19%	58.06%	3.75%	0.00%	0.46%	58.11%	41.42%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	21	364	6	0	115	154	68	0	211	340	13	0	2	198	140	0	1632
PEAK HR FACTOR :	0.875	0.875	0.375	0.000	0.701	0.740	0.810	0.000	0.812	0.867	0.813	0.000	0.250	0.884	0.673	0.000	0.897
	0.857				0.739				0.844				0.787				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	63	1	0	31	65	22	0	24	66	8	0	2	88	48	0	421
4:15 PM	2	80	1	0	25	76	30	0	40	63	3	0	1	70	28	0	419
4:30 PM	4	58	0	0	37	68	30	0	31	84	1	0	2	76	34	0	425
4:45 PM	7	47	2	0	36	57	26	0	35	95	10	0	3	90	27	0	435
5:00 PM	5	65	1	0	38	66	36	0	24	121	10	0	2	103	25	0	496
5:15 PM	2	62	2	0	28	67	29	0	46	99	10	0	0	108	22	0	475
5:30 PM	3	65	0	0	39	79	24	0	37	88	6	0	3	108	27	1	480
5:45 PM	3	40	2	0	38	78	24	0	28	62	9	0	1	91	23	0	399
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	480	9	0	272	556	221	0	265	678	57	0	14	734	234	1	3550
APPROACH %'s :	5.60%	92.66%	1.74%	0.00%	25.93%	53.00%	21.07%	0.00%	26.50%	67.80%	5.70%	0.00%	1.42%	74.67%	23.80%	0.10%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	17	239	5	0	141	269	115	0	142	403	36	0	8	409	101	1	1886
PEAK HR FACTOR :	0.607	0.919	0.625	0.000	0.904	0.851	0.799	0.000	0.772	0.833	0.900	0.000	0.667	0.947	0.935	0.250	0.951
	0.919				0.924				0.937				0.933				

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

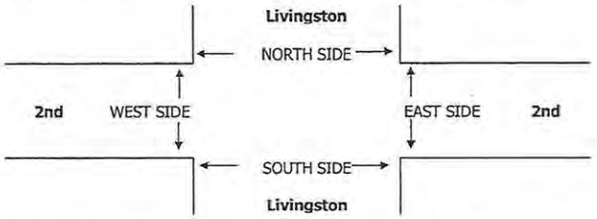
DATE:				
Tue, Nov 15, 16	LOCATION:	Long Beach	PROJECT #:	SC1123
	NORTH & SOUTH:	Livingston	LOCATION #:	13
	EAST & WEST:	2nd	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Livingston			SOUTHBOUND Livingston			EASTBOUND 2nd			WESTBOUND 2nd				U-TURNS				
	LANES:	NL 0.5	NT 0.5	NR 2	SL X	ST 1	SR 0	EL 0	ET 1	ER X	WL 1.5	WT 0.5	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	12	163	0	17	0	2	36	0	241	22	0	493	0	0	0	0	0
	7:15 AM	0	25	181	0	15	2	5	38	0	255	32	1	554	0	0	0	0	0
	7:30 AM	0	19	162	0	14	0	4	39	0	250	36	1	525	0	0	1	0	1
	7:45 AM	0	23	155	0	22	3	5	41	0	259	38	0	546	0	0	0	0	0
	8:00 AM	0	25	146	0	13	3	1	37	0	239	55	0	519	0	0	0	0	0
	8:15 AM	0	24	153	0	21	3	9	33	0	190	41	1	475	0	0	0	0	0
	8:30 AM	0	18	116	0	19	3	3	37	0	202	31	0	429	0	0	0	0	0
	8:45 AM	0	23	132	0	16	6	8	37	0	197	41	1	461	0	0	1	0	1
	VOLUMES	0	169	1,208	0	137	20	37	298	0	1,833	296	4	4,002	0	0	2	0	2
	APPROACH %	0%	12%	88%	0%	87%	13%	11%	89%	0%	86%	14%	0%						
	APP/DEPART	1,377	/	208	157	/	1,970	335	/	1,506	2,133	/	318	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	92	644	0	64	8	15	155	0	1,003	161	2	2,144					
	APPROACH %	0%	13%	88%	0%	89%	11%	9%	91%	0%	86%	14%	0%						
	PEAK HR FACTOR		0.893			0.720			0.924			0.981		0.968					
	APP/DEPART	736	/	108	72	/	1,067	170	/	799	1,166	/	170	0					
PM	4:00 PM	0	35	226	0	30	6	10	40	0	166	48	3	564	0	0	0	0	0
	4:15 PM	0	35	277	0	28	12	6	49	0	181	50	4	642	0	0	0	0	0
	4:30 PM	0	39	242	0	28	7	4	36	0	161	39	3	559	0	0	0	0	0
	4:45 PM	0	44	265	0	18	10	14	47	0	176	51	4	629	0	0	0	0	0
	5:00 PM	0	46	252	0	25	5	14	32	0	141	42	6	563	0	0	0	0	0
	5:15 PM	0	36	250	0	36	7	12	36	0	206	44	2	629	0	0	0	0	0
	5:30 PM	1	46	225	0	31	1	7	35	0	163	47	0	556	0	0	0	0	0
	5:45 PM	3	45	237	0	22	5	8	39	0	169	44	2	574	0	0	0	0	0
	VOLUMES	4	326	1,974	0	218	53	75	314	0	1,363	365	24	4,716	0	0	0	0	0
	APPROACH %	0%	14%	86%	0%	80%	20%	19%	81%	0%	78%	21%	1%						
	APP/DEPART	2,304	/	425	271	/	1,581	389	/	2,288	1,752	/	422	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	153	1,010	0	104	35	34	172	0	684	188	14	2,394					
	APPROACH %	0%	13%	87%	0%	75%	25%	17%	83%	0%	77%	21%	2%						
	PEAK HR FACTOR		0.932			0.869			0.844			0.943		0.932					
	APP/DEPART	1,163	/	201	139	/	788	206	/	1,182	886	/	223	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	5	4	0	5	14	5	4	0	5	14	0	0	0	0	0
	7:15 AM	3	3	2	6	14	3	1	2	6	12	0	2	0	0	2
	7:30 AM	3	3	1	6	13	3	2	1	5	11	0	1	0	1	2
	7:45 AM	4	2	1	9	16	4	1	0	7	12	0	1	1	2	4
	8:00 AM	9	1	1	6	17	8	0	1	6	15	1	1	0	0	2
	8:15 AM	5	3	1	8	17	5	1	1	6	13	0	2	0	2	4
	8:30 AM	7	2	5	9	23	5	0	4	6	15	2	2	1	3	8
	8:45 AM	3	1	2	9	15	2	1	2	8	13	1	0	0	1	2
	TOTAL	39	19	13	58	129	35	10	11	49	105	4	9	2	9	24
PM	4:00 PM	11	4	2	9	26	11	0	2	6	19	0	4	0	3	7
	4:15 PM	6	2	0	14	22	5	1	0	12	18	1	1	0	2	4
	4:30 PM	10	3	0	12	25	10	1	0	8	19	0	2	0	4	6
	4:45 PM	10	3	2	11	26	10	0	1	8	19	0	3	1	3	7
	5:00 PM	8	0	0	6	14	6	0	0	6	12	2	0	0	0	2
	5:15 PM	18	4	2	5	29	18	1	2	5	26	0	3	0	0	3
	5:30 PM	8	3	1	11	23	8	0	0	10	18	0	3	1	1	5
	5:45 PM	20	2	1	9	32	20	0	1	8	29	0	2	0	1	3
	TOTAL	91	21	8	77	197	88	3	6	63	160	3	18	2	14	37

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Long Beach	PROJECT #:	SC1123
Tue, Nov 15, 16	NORTH & SOUTH:	Pacific Coast	LOCATION #:	3
	EAST & WEST:	Anaheim	CONTROL:	SIGNAL

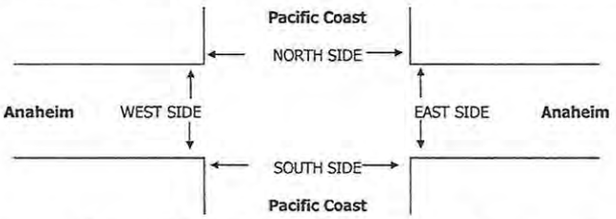
NOTES:

AM/PM NB queue

AM PM MD OTHER OTHER ◄ W ▲ N S ▼ E ►

☑ Add U-Turns to Left Turns

		NORTHBOUND Pacific Coast			SOUTHBOUND Pacific Coast			EASTBOUND Anaheim			WESTBOUND Anaheim				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1.5	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	78	268	9	6	208	6	5	36	158	5	19	14	812	0	0	0	0	0
	7:15 AM	104	326	9	15	191	5	4	35	171	7	21	10	898	0	0	0	0	0
	7:30 AM	91	298	7	25	203	2	5	44	123	16	29	11	854	0	0	0	0	0
	7:45 AM	97	303	15	31	215	8	10	79	141	7	31	12	949	0	0	0	0	0
	8:00 AM	99	398	18	15	147	5	4	47	119	8	28	23	911	0	0	1	0	1
	8:15 AM	92	366	23	15	146	8	4	32	97	6	18	11	818	0	0	0	0	0
	8:30 AM	87	270	12	15	141	1	3	46	112	10	33	15	745	0	0	0	0	0
	8:45 AM	89	281	12	17	139	5	10	55	108	8	23	13	760	0	1	0	0	1
	VOLUMES	737	2,510	105	139	1,390	40	45	374	1,029	67	202	109	6,747	0	1	1	0	2
	APPROACH %	22%	75%	3%	9%	89%	3%	3%	26%	71%	18%	53%	29%						
	APP/DEPART	3,352	/	2,664	1,569	/	2,486	1,448	/	617	378	/	980	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	391	1,325	49	86	756	20	23	205	554	38	109	56	3,612					
	APPROACH %	22%	75%	3%	10%	88%	2%	3%	26%	71%	19%	54%	28%						
	PEAK HR FACTOR		0.857			0.848			0.850			0.860		0.952					
	APP/DEPART	1,765	/	1,403	862	/	1,348	782	/	340	203	/	521	0					
PM	4:00 PM	111	190	15	27	222	4	11	30	126	8	49	25	818	0	0	0	0	0
	4:15 PM	101	226	14	11	237	7	13	35	145	14	43	21	867	0	0	0	0	0
	4:30 PM	95	197	14	17	271	9	9	38	121	11	27	20	829	0	3	0	0	3
	4:45 PM	96	195	21	11	259	2	10	40	137	14	53	25	863	0	1	0	0	1
	5:00 PM	104	207	15	16	260	7	11	46	122	15	64	23	890	0	1	0	0	1
	5:15 PM	95	189	8	14	275	8	19	44	120	9	56	19	856	0	2	0	0	2
	5:30 PM	88	220	23	8	245	4	14	48	136	9	51	24	870	0	1	0	0	1
	5:45 PM	101	243	18	15	262	7	12	46	126	16	47	18	911	0	1	0	0	1
	VOLUMES	791	1,667	128	119	2,031	48	99	327	1,033	96	390	175	6,904	0	9	0	0	9
	APPROACH %	31%	64%	5%	5%	92%	2%	7%	22%	71%	15%	59%	26%						
	APP/DEPART	2,586	/	1,950	2,198	/	3,160	1,459	/	565	661	/	1,229	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	388	859	64	53	1,042	26	56	184	504	49	218	84	3,527					
	APPROACH %	30%	66%	5%	5%	93%	2%	8%	25%	68%	14%	62%	24%						
	PEAK HR FACTOR		0.905			0.944			0.939			0.860		0.968					
	APP/DEPART	1,311	/	1,004	1,121	/	1,595	744	/	296	351	/	632	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3	0	1	3	7	2	0	1	1	4	1	0	0	2	3
	7:15 AM	0	4	0	3	7	0	2	0	1	3	0	2	0	2	4
	7:30 AM	1	1	1	1	4	1	1	1	1	4	0	0	0	0	0
	7:45 AM	7	5	1	4	17	5	1	0	0	6	2	4	1	4	11
	8:00 AM	1	4	1	1	7	1	1	0	1	3	0	3	1	0	4
	8:15 AM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	8:30 AM	3	3	2	2	10	3	2	1	1	7	0	1	1	1	3
	8:45 AM	5	0	0	2	7	1	0	0	0	1	4	0	0	2	6
	TOTAL	21	17	6	17	61	14	7	3	6	30	7	10	3	11	31
PM	4:00 PM	5	1	0	0	6	5	1	0	0	6	0	0	0	0	0
	4:15 PM	4	0	2	0	6	3	0	0	0	3	1	0	2	0	3
	4:30 PM	4	2	0	1	7	3	2	0	0	5	1	0	0	1	2
	4:45 PM	1	3	0	1	5	1	1	0	0	2	0	2	0	1	3
	5:00 PM	9	2	1	0	12	5	1	1	0	7	4	1	0	0	5
	5:15 PM	0	3	0	2	5	0	1	0	1	2	0	2	0	1	3
	5:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:45 PM	1	1	0	5	7	1	0	0	2	3	0	1	0	3	4
	TOTAL	25	12	3	9	49	19	6	1	3	29	6	6	2	6	20

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Tue, Nov 15, 16	LOCATION:	Long Beach	PROJECT #:	SC1123
	NORTH & SOUTH:	Pacific Coast	LOCATION #:	6
	EAST & WEST:	7th	CONTROL:	SIGNAL

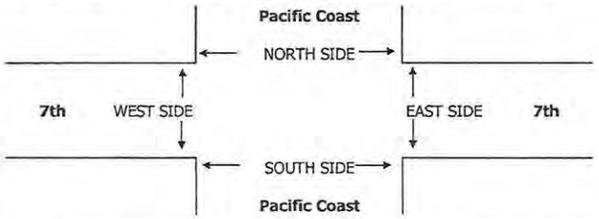
NOTES:

AM/PM EB queue

AM PM MD OTHER OTHER ◄ W ▲ N S ▼ E ►

☑ Add U-Turns to Left Turns

		NORTHBOUND Pacific Coast			SOUTHBOUND Pacific Coast			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 2	ST 3	SR 0	EL X	ET 3	ER 0	WL X	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	32	281	1	137	229	0	0	437	36	0	294	99	1,546	0	0	0	0	0
	7:15 AM	32	254	0	132	218	1	0	473	54	0	313	138	1,615	0	0	0	0	0
	7:30 AM	38	295	0	128	198	2	0	432	46	0	321	105	1,565	0	0	0	0	0
	7:45 AM	23	300	2	125	211	1	0	459	41	0	282	120	1,564	0	0	0	0	0
	8:00 AM	27	315	1	113	162	1	0	424	57	0	291	117	1,508	0	0	0	0	0
	8:15 AM	30	332	2	111	134	0	0	432	43	0	297	111	1,492	0	0	0	0	0
	8:30 AM	29	256	5	107	133	2	0	480	54	0	319	100	1,485	0	0	0	0	0
	8:45 AM	21	236	2	108	136	3	0	439	48	0	302	111	1,406	0	2	0	0	2
	VOLUMES	232	2,269	13	961	1,421	10	0	3,576	379	0	2,419	901	12,181	0	2	0	0	2
	APPROACH %	9%	90%	1%	40%	59%	0%	0%	90%	10%	0%	73%	27%						
	APP/DEPART	2,514	/	3,172	2,392	/	1,800	3,955	/	4,548	3,320	/	2,661	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	125	1,130	3	522	856	4	0	1,801	177	0	1,210	462	6,290					
	APPROACH %	10%	90%	0%	38%	62%	0%	0%	91%	9%	0%	72%	28%						
	PEAK HR FACTOR		0.944			0.944			0.938			0.927		0.974					
	APP/DEPART	1,258	/	1,592	1,382	/	1,033	1,978	/	2,326	1,672	/	1,339	0					
PM	4:00 PM	51	195	3	131	166	1	0	363	28	0	360	130	1,428	1	0	0	0	1
	4:15 PM	61	173	2	148	246	2	0	331	33	0	321	94	1,411	0	0	0	0	0
	4:30 PM	48	204	1	131	228	1	0	341	43	0	357	113	1,467	0	0	0	0	0
	4:45 PM	55	187	1	134	225	1	0	318	27	0	351	124	1,423	1	0	0	0	1
	5:00 PM	50	242	2	128	249	3	0	305	23	0	354	91	1,447	0	0	0	0	0
	5:15 PM	43	204	5	128	230	2	0	323	24	0	394	98	1,451	0	0	0	0	0
	5:30 PM	60	232	2	151	229	2	0	348	36	0	340	103	1,503	0	0	0	0	0
	5:45 PM	51	220	0	126	205	2	0	412	35	0	371	117	1,539	0	0	0	0	0
	VOLUMES	419	1,657	16	1,077	1,778	14	0	2,741	249	0	2,848	870	11,669	2	0	0	0	2
	APPROACH %	20%	79%	1%	38%	62%	0%	0%	92%	8%	0%	77%	23%						
	APP/DEPART	2,092	/	2,527	2,869	/	2,029	2,990	/	3,834	3,718	/	3,279	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	204	898	9	533	913	9	0	1,388	118	0	1,459	409	5,940					
	APPROACH %	18%	81%	1%	37%	63%	1%	0%	92%	8%	0%	78%	22%						
	PEAK HR FACTOR		0.945			0.952			0.842			0.949		0.965					
	APP/DEPART	1,111	/	1,307	1,455	/	1,031	1,506	/	1,930	1,868	/	1,672	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	3	3	0	6	0	2	2	0	4	0	1	1	0	2
	7:15 AM	2	1	1	1	5	2	0	1	1	4	0	1	0	0	1
	7:30 AM	2	4	3	0	9	2	3	3	0	8	0	1	0	0	1
	7:45 AM	5	3	1	4	13	4	1	1	4	10	1	2	0	0	3
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	3	2	3	1	9	3	0	0	1	4	0	2	3	0	5
	8:30 AM	6	1	2	2	11	6	0	2	2	10	0	1	0	0	1
	8:45 AM	1	7	3	1	12	0	6	3	1	10	1	1	0	0	2
	TOTAL	19	21	16	9	65	17	12	12	9	50	2	9	4	0	15
PM	4:00 PM	4	7	2	3	16	4	5	2	3	14	0	2	0	0	2
	4:15 PM	4	3	4	2	13	4	1	4	1	10	0	2	0	1	3
	4:30 PM	4	1	4	1	10	4	0	4	1	9	0	1	0	0	1
	4:45 PM	2	4	5	0	11	2	3	5	0	10	0	1	0	0	1
	5:00 PM	2	2	2	0	6	2	2	2	0	6	0	0	0	0	0
	5:15 PM	3	2	1	0	6	3	1	1	0	5	0	1	0	0	1
	5:30 PM	1	0	1	1	3	1	0	1	1	3	0	0	0	0	0
	5:45 PM	0	2	2	1	5	0	2	1	1	4	0	0	1	0	1
	TOTAL	20	21	21	8	70	20	14	20	7	61	0	7	1	1	9

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bellflower Blvd & Del Amo Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-096
Date: 5/23/2018

Total

NS/EW Streets:	Bellflower Blvd				Bellflower Blvd				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	21	58	16	0	37	94	17	0	9	149	30	0	29	222	18	0	700
7:15 AM	37	84	34	0	42	142	21	0	8	173	57	1	25	258	16	0	898
7:30 AM	50	139	47	0	47	213	19	0	12	195	107	0	40	262	19	0	1150
7:45 AM	65	132	24	0	27	131	23	0	16	213	66	1	42	345	28	0	1113
8:00 AM	40	119	23	1	33	143	17	1	22	215	42	0	43	281	30	0	1010
8:15 AM	29	108	28	0	45	159	18	0	13	204	42	0	39	267	31	1	984
8:30 AM	41	109	35	0	39	175	19	1	23	152	63	1	66	255	18	0	997
8:45 AM	56	138	27	0	42	158	20	0	21	213	90	0	45	279	23	0	1112
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	339	887	234	1	312	1215	154	2	124	1514	497	3	329	2169	183	1	7964
APPROACH %'s :	23.20%	60.71%	16.02%	0.07%	18.54%	72.19%	9.15%	0.12%	5.80%	70.81%	23.25%	0.14%	12.27%	80.87%	6.82%	0.04%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	184	498	122	1	152	646	77	1	63	827	257	1	164	1155	108	1	4257
PEAK HR FACTOR :	0.708	0.896	0.649	0.250	0.809	0.758	0.837	0.250	0.716	0.962	0.600	0.250	0.953	0.837	0.871	0.250	0.925
	0.853				0.785				0.914				0.860				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	36	162	43	0	43	103	20	0	21	272	36	0	34	231	32	1	1034
4:15 PM	54	167	42	0	37	100	19	0	20	323	38	1	43	233	27	0	1104
4:30 PM	42	204	42	0	37	122	11	0	33	274	31	0	51	234	37	0	1118
4:45 PM	52	178	48	0	49	127	29	0	20	314	44	0	48	264	31	0	1204
5:00 PM	57	227	69	0	40	116	19	0	24	278	36	0	47	226	28	3	1170
5:15 PM	50	182	56	0	58	110	18	0	24	344	37	0	38	267	49	0	1233
5:30 PM	56	190	54	0	54	147	23	1	25	294	39	0	44	251	41	0	1219
5:45 PM	75	218	57	0	42	112	30	1	23	303	53	0	36	261	38	0	1249
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	422	1528	411	0	360	937	169	2	190	2402	314	1	341	1967	283	4	9331
APPROACH %'s :	17.87%	64.72%	17.41%	0.00%	24.52%	63.83%	11.51%	0.14%	6.54%	82.63%	10.80%	0.03%	13.14%	75.80%	10.91%	0.15%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	238	817	236	0	194	485	90	2	96	1219	165	0	165	1005	156	3	4871
PEAK HR FACTOR :	0.793	0.900	0.855	0.000	0.836	0.825	0.750	0.500	0.960	0.886	0.778	0.000	0.878	0.941	0.796	0.250	0.975
	0.914				0.857				0.914				0.939				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bellflower Blvd & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05307-075
Date: 5/10/2018

Total

NS/EW Streets:	Bellflower Blvd				Bellflower Blvd				Carson St				Carson St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	66	17	0	25	156	8	0	8	104	14	0	31	235	13	1	693
7:15 AM	30	109	26	0	28	170	11	0	25	141	22	0	41	269	11	1	884
7:30 AM	31	145	30	0	33	237	25	0	41	142	34	0	54	298	23	0	1093
7:45 AM	36	141	31	0	17	229	24	0	22	157	35	0	54	337	40	0	1123
8:00 AM	32	159	19	0	35	176	15	0	13	130	30	0	42	241	48	3	943
8:15 AM	30	116	32	0	37	129	23	0	16	162	43	1	32	309	29	0	959
8:30 AM	35	106	27	0	43	181	22	0	17	170	31	0	39	282	34	4	991
8:45 AM	31	143	31	0	36	177	24	0	26	190	20	2	45	261	41	1	1028
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	240	985	213	0	254	1455	152	0	168	1196	229	3	338	2232	239	10	7714
APPROACH %'s :	16.69%	68.50%	14.81%	0.00%	13.65%	78.18%	8.17%	0.00%	10.53%	74.94%	14.35%	0.19%	11.99%	79.18%	8.48%	0.35%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	129	561	112	0	122	771	87	0	92	591	142	1	182	1185	140	3	4118
PEAK HR FACTOR :	0.896	0.882	0.875	0.000	0.824	0.813	0.870	0.000	0.561	0.912	0.826	0.250	0.843	0.879	0.729	0.250	0.917
	0.955				0.831				0.930				0.876				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	39	230	55	1	41	143	17	0	31	319	28	5	33	190	41	3	1176
4:15 PM	36	193	51	0	51	135	14	0	44	324	42	0	41	223	58	7	1219
4:30 PM	41	200	38	0	45	163	15	0	40	315	27	2	32	186	38	12	1154
4:45 PM	34	209	49	0	46	150	28	0	41	380	40	0	36	191	40	5	1249
5:00 PM	39	227	52	0	44	163	22	0	35	364	24	2	33	190	40	5	1240
5:15 PM	37	219	39	0	44	123	23	0	43	382	46	1	38	218	53	7	1273
5:30 PM	40	248	42	1	44	139	21	0	42	343	45	0	29	211	58	9	1272
5:45 PM	38	241	46	0	44	118	18	0	44	330	31	1	43	225	70	3	1252
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	304	1767	372	2	359	1134	158	0	320	2757	283	11	285	1634	398	51	9835
APPROACH %'s :	12.43%	72.27%	15.21%	0.08%	21.74%	68.69%	9.57%	0.00%	9.49%	81.79%	8.40%	0.33%	12.04%	69.00%	16.81%	2.15%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	154	935	179	1	176	543	84	0	164	1419	146	4	143	844	221	24	5037
PEAK HR FACTOR :	0.963	0.943	0.861	0.250	1.000	0.833	0.913	0.000	0.932	0.929	0.793	0.500	0.831	0.938	0.789	0.667	0.989
	0.958				0.877				0.918				0.903				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bellflower Blvd & Spring St
City: Long Beach
Control: Signalized

Project ID: 18-05307-076
Date: 5/10/2018

Total

NS/EW Streets:	Bellflower Blvd				Bellflower Blvd				Spring St				Spring St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	1	4	0	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	18	110	18	0	16	175	21	0	8	74	15	0	41	279	8	0	783
7:15 AM	29	130	16	2	32	251	34	0	14	112	15	0	37	305	22	0	999
7:30 AM	53	175	26	2	17	243	37	0	22	161	41	3	47	376	34	0	1237
7:45 AM	52	250	22	2	19	325	58	0	21	72	23	1	48	394	26	0	1313
8:00 AM	40	171	30	3	18	268	46	1	18	83	25	1	36	381	21	0	1142
8:15 AM	42	189	25	1	28	223	33	1	11	70	21	0	28	310	19	0	1001
8:30 AM	51	169	17	3	14	205	36	0	26	96	26	0	38	304	22	0	1007
8:45 AM	37	231	31	2	12	263	27	3	31	83	23	1	38	264	17	1	1064
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	322	1425	185	15	156	1953	292	5	151	751	189	6	313	2613	169	1	8546
APPROACH %'s :	16.54%	73.19%	9.50%	0.77%	6.48%	81.17%	12.14%	0.21%	13.76%	68.46%	17.23%	0.55%	10.11%	84.40%	5.46%	0.03%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	187	785	103	8	82	1059	174	2	72	386	110	5	159	1461	100	0	4693
PEAK HR FACTOR :	0.882	0.785	0.858	0.667	0.732	0.815	0.750	0.500	0.818	0.599	0.671	0.417	0.828	0.927	0.735	0.000	0.894
	0.831				0.819				0.631				0.919				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	1	4	0	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	51	267	39	5	24	176	16	0	42	227	31	0	35	174	35	5	1127
4:15 PM	34	256	32	4	29	168	28	2	29	297	44	0	41	168	37	4	1173
4:30 PM	30	286	31	2	28	178	10	1	37	262	34	2	41	131	33	0	1106
4:45 PM	37	273	27	1	29	156	18	1	34	309	38	1	42	152	39	2	1159
5:00 PM	37	287	30	2	15	186	21	1	40	315	36	1	40	133	35	1	1180
5:15 PM	24	267	34	1	28	144	10	1	38	335	36	1	39	179	46	2	1185
5:30 PM	39	310	38	1	25	164	22	1	43	303	38	1	31	151	27	2	1196
5:45 PM	33	250	28	2	24	171	15	0	40	284	36	0	36	164	39	4	1126
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	285	2196	259	18	202	1343	140	7	303	2332	293	6	305	1252	291	20	9252
APPROACH %'s :	10.33%	79.62%	9.39%	0.65%	11.94%	79.37%	8.27%	0.41%	10.33%	79.48%	9.99%	0.20%	16.33%	67.02%	15.58%	1.07%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	137	1137	129	5	97	650	71	4	155	1262	148	4	152	615	147	7	4720
PEAK HR FACTOR :	0.878	0.917	0.849	0.625	0.836	0.874	0.807	1.000	0.901	0.942	0.974	1.000	0.905	0.859	0.799	0.875	0.987
	0.907				0.922				0.957				0.866				

National Data & Surveying Services Intersection Turning Movement Count

Location: Bellflower Blvd & Los Coyotes Diagonal
City: Long Beach
Control: Signalized

Project ID: 18-05307-077
Date: 5/23/2018

Total

NS/EW Streets:	Bellflower Blvd				Bellflower Blvd				Los Coyotes Diagonal				Los Coyotes Diagonal				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	0	3	0	0	1	2.5	1.5	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	174	55	0	0	135	75	0	46	142	100	2	25	116	2	0	876
7:15 AM	2	178	107	0	0	129	104	0	53	209	111	1	27	147	0	1	1069
7:30 AM	2	241	131	0	0	165	91	0	86	260	110	0	34	193	1	0	1314
7:45 AM	3	270	99	2	0	185	117	0	65	239	148	0	49	184	0	0	1361
8:00 AM	6	253	82	1	0	163	95	0	64	167	125	1	35	185	1	0	1178
8:15 AM	3	234	80	1	0	167	107	0	35	153	132	0	39	167	0	0	1118
8:30 AM	2	242	99	1	0	187	89	0	54	236	140	0	51	170	2	0	1273
8:45 AM	4	274	121	0	0	199	87	0	50	209	106	0	52	185	0	0	1287
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	26	1866	774	5	0	1330	765	0	453	1615	972	4	312	1347	6	1	9476
APPROACH %'s :	0.97%	69.86%	28.98%	0.19%	0.00%	63.48%	36.52%	0.00%	14.88%	53.06%	31.93%	0.13%	18.73%	80.85%	0.36%	0.06%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	14	998	392	4	0	680	410	0	250	819	515	1	157	729	2	0	4971
PEAK HR FACTOR :	0.583	0.924	0.748	0.500	0.000	0.919	0.876	0.000	0.727	0.788	0.870	0.250	0.801	0.944	0.500	0.000	0.913
	0.941				0.902				0.869				0.953				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	0	3	0	0	1	2.5	1.5	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	8	386	144	1	0	201	88	0	68	266	99	0	54	139	0	0	1454
4:15 PM	7	444	159	4	0	249	107	0	56	279	104	1	43	137	1	0	1591
4:30 PM	13	311	127	3	0	193	93	0	79	285	99	0	62	134	2	0	1401
4:45 PM	8	393	146	2	0	232	117	0	54	259	92	0	43	131	0	0	1477
5:00 PM	5	383	150	0	0	184	91	0	61	276	103	0	47	133	3	2	1438
5:15 PM	7	469	148	3	0	238	99	0	53	275	76	0	42	182	1	0	1593
5:30 PM	7	339	131	2	0	211	102	0	69	274	101	0	52	166	2	0	1456
5:45 PM	7	318	136	2	0	233	102	0	53	240	102	0	53	132	1	0	1379
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	62	3043	1141	17	0	1741	799	0	493	2154	776	1	396	1154	10	2	11789
APPROACH %'s :	1.45%	71.38%	26.77%	0.40%	0.00%	68.54%	31.46%	0.00%	14.40%	62.91%	22.66%	0.03%	25.35%	73.88%	0.64%	0.13%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	27	1584	575	7	0	865	409	0	237	1084	372	0	184	612	6	2	5964
PEAK HR FACTOR :	0.844	0.844	0.958	0.583	0.000	0.909	0.874	0.000	0.859	0.982	0.903	0.000	0.885	0.841	0.500	0.250	0.936
	0.874				0.913				0.953				0.893				

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

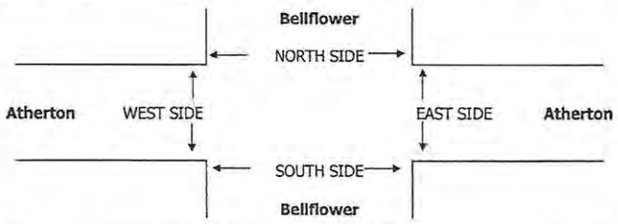
DATE:				
Tue, Nov 15, 16	LOCATION:	Long Beach	PROJECT #:	SC1123
	NORTH & SOUTH:	Bellflower	LOCATION #:	1
	EAST & WEST:	Atherton	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Bellflower			SOUTHBOUND Bellflower			EASTBOUND Atherton			WESTBOUND Atherton				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	3	1	2	3	0	1	2	0	1	2	0		0	0	0	0	
AM	7:00 AM	3	112	18	44	227	6	13	56	26	31	48	11	595	0	0	0	0	0
	7:15 AM	8	94	33	90	303	20	14	128	36	33	90	10	859	0	1	0	0	1
	7:30 AM	22	133	43	136	275	22	24	177	41	37	76	24	1,010	0	0	0	2	2
	7:45 AM	19	159	98	128	350	28	8	190	52	51	87	18	1,188	0	0	0	0	0
	8:00 AM	16	187	49	113	233	33	32	155	44	56	88	40	1,046	0	0	0	2	2
	8:15 AM	18	194	43	65	202	27	31	106	31	31	70	21	839	0	0	0	0	0
	8:30 AM	13	158	40	82	219	30	32	144	23	38	71	18	868	0	0	0	0	0
	8:45 AM	21	181	55	107	228	36	31	150	29	41	75	13	967	0	0	0	0	0
	VOLUMES	120	1,218	379	765	2,037	202	185	1,106	282	318	605	155	7,372	0	1	0	4	5
	APPROACH %	7%	71%	22%	25%	68%	7%	12%	70%	18%	29%	56%	14%						
	APP/DEPART	1,717	/	1,559	3,004	/	2,633	1,573	/	2,253	1,078	/	927	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	65	573	223	467	1,161	103	78	650	173	177	341	92	4,103					
	APPROACH %	8%	67%	26%	27%	67%	6%	9%	72%	19%	29%	56%	15%						
	PEAK HR FACTOR		0.780			0.855			0.901			0.829		0.863					
	APP/DEPART	861	/	744	1,731	/	1,507	901	/	1,343	610	/	509	0					
PM	4:00 PM	39	291	54	24	200	53	37	105	31	57	134	63	1,088	0	0	0	2	2
	4:15 PM	41	258	51	33	210	51	36	86	35	45	106	42	994	0	0	0	0	0
	4:30 PM	39	243	53	48	180	33	44	128	28	46	134	48	1,024	0	1	0	0	1
	4:45 PM	35	285	47	48	227	47	33	129	35	50	138	67	1,141	0	0	0	1	1
	5:00 PM	46	270	50	33	199	36	45	103	32	60	186	69	1,129	0	0	0	2	2
	5:15 PM	36	219	57	40	236	48	42	117	54	49	133	62	1,093	0	0	0	0	0
	5:30 PM	40	207	66	37	188	44	44	116	37	50	141	52	1,022	0	0	0	1	1
	5:45 PM	26	204	41	29	234	55	29	108	27	46	118	28	945	0	0	0	1	1
	VOLUMES	302	1,977	419	292	1,674	367	310	892	279	403	1,090	431	8,436	0	1	0	7	8
	APPROACH %	11%	73%	16%	13%	72%	16%	21%	60%	19%	21%	57%	22%						
	APP/DEPART	2,698	/	2,719	2,333	/	2,349	1,481	/	1,609	1,924	/	1,759	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	156	1,017	207	169	842	164	164	477	149	205	591	246	4,387					
	APPROACH %	11%	74%	15%	14%	72%	14%	21%	60%	19%	20%	57%	24%						
	PEAK HR FACTOR		0.940			0.907			0.927			0.827		0.961					
	APP/DEPART	1,380	/	1,428	1,175	/	1,193	790	/	855	1,042	/	911	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	3	1	0	4	0	3	1	0	4	0	0	0	0	0
	7:15 AM	2	4	1	1	8	1	4	1	0	6	1	0	0	1	2
	7:30 AM	1	12	2	4	19	1	4	2	4	11	0	8	0	0	8
	7:45 AM	2	11	2	3	18	1	4	1	3	9	1	7	1	0	9
	8:00 AM	2	5	5	6	18	0	1	2	6	9	2	4	3	0	9
	8:15 AM	0	5	2	2	9	0	2	1	1	4	0	3	1	1	5
	8:30 AM	5	12	7	3	27	3	7	3	2	15	2	5	4	1	12
	8:45 AM	5	2	3	7	17	4	1	3	7	15	1	1	0	0	2
	TOTAL	17	54	23	26	120	10	26	14	23	73	7	28	9	3	47
PM	4:00 PM	5	8	3	9	25	4	5	1	7	17	1	3	2	2	8
	4:15 PM	2	13	8	3	26	1	12	6	2	21	1	1	2	1	5
	4:30 PM	7	10	4	3	24	5	8	4	3	20	2	2	0	0	4
	4:45 PM	2	8	4	1	15	1	4	3	1	9	1	4	1	0	6
	5:00 PM	10	4	4	0	18	8	2	3	0	13	2	2	1	0	5
	5:15 PM	0	7	5	2	14	0	5	4	2	11	0	2	1	0	3
	5:30 PM	1	7	5	0	13	0	5	3	0	8	1	2	2	0	5
	5:45 PM	0	9	5	1	15	0	9	3	1	13	0	0	2	0	2
	TOTAL	27	66	38	19	150	19	50	27	16	112	8	16	11	3	38

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Tue, Nov 15, 16	LOCATION:	Long Beach	PROJECT #:	SC1123
	NORTH & SOUTH:	Bellflower	LOCATION #:	7
	EAST & WEST:	7th	CONTROL:	SIGNAL

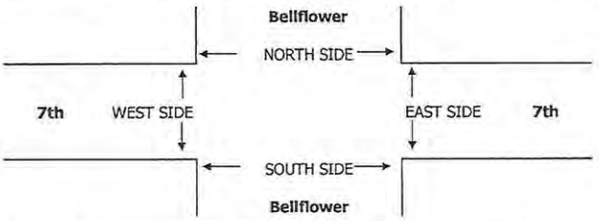
NOTES:

AM/PM WB queue

AM PM MD OTHER OTHER ◄ W ▲ N S ▼ E ►

☑ Add U-Turns to Left Turns

		NORTHBOUND Bellflower			SOUTHBOUND Bellflower			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL X	NT 3	NR 1	SL 2	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	103	24	41	56	41	45	587	1	4	402	52	1,356	0	0	0	0	0
	7:15 AM	0	126	18	59	78	39	50	491	5	5	373	77	1,321	0	0	0	0	0
	7:30 AM	0	131	23	37	63	40	73	499	2	4	416	76	1,364	0	0	0	0	0
	7:45 AM	0	163	53	79	86	41	86	506	0	13	349	68	1,444	0	0	0	2	2
	8:00 AM	0	150	41	45	83	43	46	457	6	7	406	61	1,345	0	1	0	0	1
	8:15 AM	0	123	26	47	69	37	65	526	1	5	389	49	1,337	0	0	0	0	0
	8:30 AM	0	141	29	38	78	52	64	439	4	11	339	36	1,231	0	0	0	0	0
	8:45 AM	0	153	33	38	90	55	72	460	4	8	353	58	1,324	0	0	0	2	2
	VOLUMES	0	1,090	247	384	603	348	501	3,965	23	57	3,027	477	10,722	0	1	0	4	5
	APPROACH %	0%	82%	18%	29%	45%	26%	11%	88%	1%	2%	85%	13%						
	APP/DEPART	1,337	/	2,069	1,335	/	679	4,489	/	4,599	3,561	/	3,375	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	567	143	208	301	161	270	1,988	9	29	1,560	254	5,490					
	APPROACH %	0%	80%	20%	31%	45%	24%	12%	88%	0%	2%	85%	14%						
	PEAK HR FACTOR		0.822			0.813			0.957			0.929		0.950					
	APP/DEPART	710	/	1,092	670	/	337	2,267	/	2,340	1,843	/	1,721	0					
PM	4:00 PM	0	112	20	79	151	114	44	399	2	8	343	24	1,296	0	0	0	0	0
	4:15 PM	0	130	36	71	110	86	28	456	0	8	377	45	1,347	0	0	0	1	1
	4:30 PM	0	116	47	93	143	96	46	425	5	11	348	33	1,363	0	1	0	0	1
	4:45 PM	0	129	37	83	170	85	35	398	3	13	383	34	1,370	0	0	0	1	1
	5:00 PM	0	119	31	100	145	106	33	460	4	8	390	39	1,435	0	1	0	0	1
	5:15 PM	0	140	19	79	173	94	30	401	6	10	368	32	1,352	0	0	0	0	0
	5:30 PM	0	128	41	60	121	91	51	483	4	10	409	46	1,444	0	1	0	0	1
	5:45 PM	0	122	29	79	131	82	27	458	4	11	371	32	1,346	0	0	0	1	1
	VOLUMES	0	996	260	644	1,144	754	294	3,480	28	79	2,989	285	10,953	0	3	0	3	6
	APPROACH %	0%	79%	21%	25%	45%	30%	8%	92%	1%	2%	89%	8%						
	APP/DEPART	1,256	/	1,578	2,542	/	1,248	3,802	/	4,384	3,353	/	3,743	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	516	128	322	609	376	149	1,742	17	41	1,550	151	5,601					
	APPROACH %	0%	80%	20%	25%	47%	29%	8%	91%	1%	2%	89%	9%						
	PEAK HR FACTOR		0.953			0.931			0.887			0.937		0.970					
	APP/DEPART	644	/	818	1,307	/	666	1,908	/	2,191	1,742	/	1,926	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3	5	3	5	16	3	4	1	4	12	0	1	2	1	4
	7:15 AM	5	2	0	4	11	4	2	0	2	8	1	0	0	2	3
	7:30 AM	3	6	0	4	13	2	6	0	2	10	1	0	0	2	3
	7:45 AM	18	3	1	7	29	15	1	1	7	24	3	2	0	0	5
	8:00 AM	4	2	3	0	9	3	2	0	0	5	1	0	3	0	4
	8:15 AM	10	1	0	2	13	9	1	0	1	11	1	0	0	1	2
	8:30 AM	6	3	1	3	13	5	2	0	2	9	1	1	1	1	4
	8:45 AM	7	6	2	5	20	6	5	1	4	16	1	1	1	1	4
	TOTAL	56	28	10	30	124	47	23	3	22	95	9	5	7	8	29
PM	4:00 PM	15	8	1	7	31	14	8	1	6	29	1	0	0	1	2
	4:15 PM	7	5	1	7	20	6	4	1	5	16	1	1	0	2	4
	4:30 PM	7	3	0	4	14	7	3	0	4	14	0	0	0	0	0
	4:45 PM	11	2	0	4	17	10	2	0	3	15	1	0	0	1	2
	5:00 PM	8	5	0	7	20	5	4	0	5	14	3	1	0	2	6
	5:15 PM	11	3	1	1	16	10	3	0	1	14	1	0	1	0	2
	5:30 PM	2	1	0	6	9	1	1	0	4	6	1	0	0	2	3
	5:45 PM	2	2	1	3	8	2	2	1	3	8	0	0	0	0	0
	TOTAL	63	29	4	39	135	55	27	3	31	116	8	2	1	8	19

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Long Beach	PROJECT #:	SC1123
Tue, Nov 15, 16	NORTH & SOUTH:	Pacific Coast	LOCATION #:	9
	EAST & WEST:	Bellflower	CONTROL:	SIGNAL

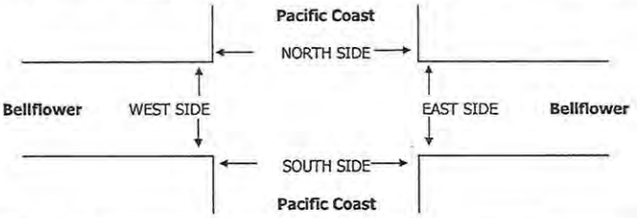
NOTES:

AM/PM NB/SB queue

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Pacific Coast			SOUTHBOUND Pacific Coast			EASTBOUND Bellflower			WESTBOUND Bellflower				U-TURNS				
	LANES:	NL 1	NT 3	NR 1	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1.5	WT 2.5	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	5	302	60	14	259	2	15	59	18	44	15	4	797	0	0	0	0	0
	7:15 AM	4	298	75	26	280	6	19	70	19	61	27	0	885	0	2	0	1	3
	7:30 AM	5	298	76	12	208	9	22	108	13	44	23	0	818	0	1	0	1	2
	7:45 AM	11	295	82	24	256	10	20	116	17	63	29	0	923	0	1	0	0	1
	8:00 AM	4	344	71	13	186	9	26	115	21	63	38	0	890	0	0	0	3	3
	8:15 AM	12	306	80	13	173	7	18	75	14	36	35	0	769	0	0	0	0	0
	8:30 AM	14	244	83	12	165	11	14	72	12	52	43	0	722	1	1	0	1	3
	8:45 AM	11	277	93	12	182	5	17	91	13	61	35	2	799	1	1	0	3	5
	VOLUMES	66	2,364	620	126	1,709	59	151	706	127	424	245	6	6,603	2	6	0	9	17
	APPROACH %	2%	78%	20%	7%	90%	3%	15%	72%	13%	63%	36%	1%						
	APP/DEPART	3,050	/	2,527	1,894	/	2,253	984	/	1,455	675	/	368	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	24	1,235	304	75	930	34	87	409	70	231	117	0	3,516					
	APPROACH %	2%	79%	19%	7%	90%	3%	15%	72%	12%	66%	34%	0%						
	PEAK HR FACTOR		0.933			0.833			0.873			0.861		0.952					
	APP/DEPART	1,563	/	1,326	1,039	/	1,226	566	/	789	348	/	175	0					
PM	4:00 PM	22	270	75	19	197	18	11	62	13	85	68	1	841	0	1	1	1	3
	4:15 PM	10	215	82	23	207	10	6	84	12	87	60	0	796	0	2	0	3	5
	4:30 PM	28	242	79	22	271	17	10	75	19	69	62	0	894	2	0	0	1	3
	4:45 PM	24	246	72	14	230	10	16	103	22	112	92	1	942	0	1	0	2	3
	5:00 PM	22	229	58	23	231	14	19	98	23	96	60	4	877	0	0	0	4	4
	5:15 PM	25	265	78	23	243	13	11	65	40	111	89	0	963	1	0	0	1	2
	5:30 PM	20	259	87	31	210	13	12	76	30	74	72	0	884	0	0	0	1	1
	5:45 PM	38	254	64	25	222	12	9	71	19	67	49	2	832	0	2	0	1	3
	VOLUMES	189	1,980	595	180	1,811	107	94	634	178	701	552	8	7,029	3	6	1	14	24
	APPROACH %	7%	72%	22%	9%	86%	5%	10%	70%	20%	56%	44%	1%						
	APP/DEPART	2,764	/	2,087	2,098	/	2,679	906	/	1,417	1,261	/	846	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	99	982	287	82	975	54	56	341	104	388	303	5	3,676					
	APPROACH %	7%	72%	21%	7%	88%	5%	11%	68%	21%	56%	44%	1%						
	PEAK HR FACTOR		0.929			0.896			0.888			0.849		0.954					
	APP/DEPART	1,368	/	1,044	1,111	/	1,462	501	/	717	696	/	453	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	5	0	3	3	11	2	0	0	1	3	3	0	3	2	8
	7:15 AM	3	1	1	2	7	1	0	1	0	2	2	1	0	2	5
	7:30 AM	3	0	0	2	5	1	0	0	1	2	2	0	0	1	3
	7:45 AM	1	1	2	1	5	1	0	2	0	3	0	1	0	1	2
	8:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	8:15 AM	2	0	2	1	5	2	0	1	1	4	0	0	1	0	1
	8:30 AM	3	0	1	2	6	2	0	1	1	4	1	0	0	1	2
	8:45 AM	2	0	1	2	5	1	0	1	2	4	1	0	0	0	1
	TOTAL	19	2	11	13	45	10	0	6	6	22	9	2	5	7	23
PM	4:00 PM	2	1	1	1	5	1	0	0	0	1	1	1	1	1	4
	4:15 PM	2	0	0	4	6	0	0	0	1	1	2	0	0	3	5
	4:30 PM	1	0	2	0	3	0	0	1	0	1	1	0	1	0	2
	4:45 PM	4	0	3	2	9	1	0	3	2	6	3	0	0	0	3
	5:00 PM	3	0	1	0	4	3	0	1	0	4	0	0	0	0	0
	5:15 PM	1	0	2	1	4	0	0	2	1	3	1	0	0	0	1
	5:30 PM	0	0	1	2	3	0	0	1	2	3	0	0	0	0	0
	5:45 PM	0	1	1	1	3	0	0	0	0	0	0	1	1	1	3
	TOTAL	13	2	11	11	37	5	0	8	6	19	8	2	3	5	18

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

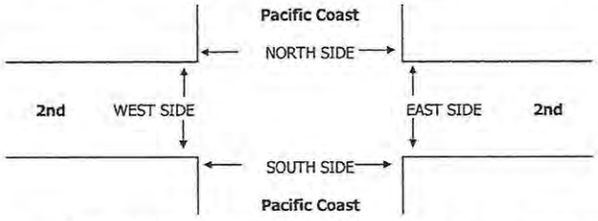
DATE:	LOCATION:	Long Beach	PROJECT #:	SC1123
Tue, Nov 15, 16	NORTH & SOUTH:	Pacific Coast	LOCATION #:	17
	EAST & WEST:	2nd	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Pacific Coast			SOUTHBOUND Pacific Coast			EASTBOUND 2nd			WESTBOUND 2nd				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 1	EL 2	ET 2.5	ER 1.5	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	79	300	71	39	265	28	53	261	119	84	197	48	1,544	0	0	0	1	1
	7:15 AM	95	249	67	64	268	23	52	333	119	78	213	54	1,615	0	0	0	0	0
	7:30 AM	109	312	78	58	248	32	52	333	113	71	198	68	1,672	0	0	0	1	1
	7:45 AM	87	292	94	56	191	67	55	298	71	87	287	73	1,658	0	0	0	0	0
	8:00 AM	101	278	74	64	210	44	68	267	111	84	229	111	1,641	0	0	0	1	1
	8:15 AM	105	303	79	50	170	38	67	244	82	68	164	46	1,416	0	0	1	1	2
	8:30 AM	114	255	61	32	192	59	50	272	92	43	200	75	1,445	0	0	0	1	1
	8:45 AM	124	251	47	31	182	52	78	212	75	85	205	83	1,425	0	0	1	2	3
	VOLUMES	814	2,240	571	394	1,726	343	475	2,220	782	600	1,693	558	12,416	0	0	2	7	9
	APPROACH %	22%	62%	16%	16%	70%	14%	14%	64%	22%	21%	59%	20%						
	APP/DEPART	3,625	/	3,271	2,463	/	3,101	3,477	/	3,192	2,851	/	2,852	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	392	1,131	313	242	917	166	227	1,231	414	320	927	306	6,586					
	APPROACH %	21%	62%	17%	18%	69%	13%	12%	66%	22%	21%	60%	20%						
	PEAK HR FACTOR		0.920			0.933			0.929			0.869		0.985					
	APP/DEPART	1,836	/	1,664	1,325	/	1,649	1,872	/	1,788	1,553	/	1,485	0					
PM	4:00 PM	105	246	75	61	202	98	75	267	59	69	248	66	1,571	0	0	0	1	1
	4:15 PM	91	232	71	56	251	96	66	303	69	65	285	69	1,654	0	0	0	0	0
	4:30 PM	119	218	59	58	231	106	82	302	89	79	293	75	1,711	0	0	0	2	2
	4:45 PM	96	216	85	71	256	97	93	244	64	92	292	75	1,681	0	0	1	2	3
	5:00 PM	86	261	94	76	258	102	45	287	64	71	303	95	1,742	0	0	0	1	1
	5:15 PM	119	234	68	62	246	110	78	262	80	90	307	91	1,747	0	0	0	2	2
	5:30 PM	73	239	82	59	274	85	93	221	36	70	266	79	1,577	0	1	1	3	5
	5:45 PM	110	199	75	68	221	100	64	323	70	70	345	67	1,712	0	0	0	4	4
	VOLUMES	799	1,845	609	511	1,939	794	596	2,209	531	606	2,339	617	13,395	0	1	2	15	18
	APPROACH %	25%	57%	19%	16%	60%	24%	18%	66%	16%	17%	66%	17%						
	APP/DEPART	3,253	/	3,057	3,244	/	3,061	3,336	/	3,343	3,562	/	3,934	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	420	929	306	267	991	415	298	1,095	297	332	1,195	336	6,881					
	APPROACH %	25%	56%	18%	16%	59%	25%	18%	65%	18%	18%	64%	18%						
	PEAK HR FACTOR		0.938			0.959			0.893			0.954		0.985					
	APP/DEPART	1,655	/	1,562	1,673	/	1,613	1,690	/	1,675	1,863	/	2,031	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	4	1	5	4	14	3	0	0	1	4	1	1	5	3	10
	7:15 AM	2	1	2	0	5	0	0	0	0	0	2	1	2	0	5
	7:30 AM	3	1	2	4	10	2	0	1	2	5	1	1	1	2	5
	7:45 AM	2	1	8	1	12	1	1	2	1	5	1	0	6	0	7
	8:00 AM	3	1	5	5	14	2	1	2	3	8	1	0	3	2	6
	8:15 AM	2	0	4	0	6	2	0	3	0	5	0	0	1	0	1
	8:30 AM	4	3	2	2	11	3	2	2	1	8	1	1	0	1	3
	8:45 AM	2	3	3	5	13	1	0	1	1	3	1	3	2	4	10
	TOTAL	22	11	31	21	85	14	4	11	9	38	8	7	20	12	47
PM	4:00 PM	8	5	9	7	29	8	1	8	3	20	0	4	1	4	9
	4:15 PM	6	6	8	5	25	2	1	4	2	9	4	5	4	3	16
	4:30 PM	4	4	6	5	19	3	3	4	4	14	1	1	2	1	5
	4:45 PM	9	2	9	6	26	9	1	8	4	22	0	1	1	2	4
	5:00 PM	2	2	3	1	8	1	2	1	1	5	1	0	2	0	3
	5:15 PM	5	0	4	7	16	5	0	4	5	14	0	0	0	2	2
	5:30 PM	3	1	3	8	15	2	1	3	5	11	1	0	0	3	4
	5:45 PM	10	2	4	6	22	6	2	3	5	16	4	0	1	1	6
	TOTAL	47	22	46	45	160	36	11	35	29	111	11	11	11	16	49

National Data & Surveying Services

Intersection Turning Movement Count

Location: 1st St & Marina Dr
City: Long Beach
Control: Signalized

Project ID: 18-05307-104
Date: 5/23/2018

Total

NS/EW Streets:	1st St				1st St				Marina Dr				Marina Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	9	7	1	0	3	2	2	1	2	13	3	0	1	24	15	0	83
7:15 AM	9	5	3	0	5	5	2	0	1	13	1	0	1	20	11	0	76
7:30 AM	12	9	0	0	3	0	3	2	1	16	11	0	1	11	16	0	85
7:45 AM	11	7	4	0	11	3	5	1	1	16	9	0	1	28	14	0	111
8:00 AM	14	9	0	0	7	2	1	1	0	17	10	0	3	27	23	0	114
8:15 AM	7	4	6	0	4	4	2	0	0	16	10	0	1	23	7	0	84
8:30 AM	7	4	1	0	6	1	4	1	1	17	2	0	0	18	8	0	70
8:45 AM	13	13	3	0	3	4	0	0	3	23	4	0	2	25	11	1	105
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	82	58	18	0	42	21	19	6	9	131	50	0	10	176	105	1	728
APPROACH %'s :	51.90%	36.71%	11.39%	0.00%	47.73%	23.86%	21.59%	6.82%	4.74%	68.95%	26.32%	0.00%	3.42%	60.27%	35.96%	0.34%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	44	29	10	0	25	9	11	4	2	65	40	0	6	89	60	0	394
PEAK HR FACTOR :	0.786	0.806	0.417	0.000	0.568	0.563	0.550	0.500	0.500	0.956	0.909	0.000	0.500	0.795	0.652	0.000	0.864
	0.902				0.613				0.955				0.731				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	10	11	3	0	11	3	5	1	0	25	14	0	3	22	18	0	126
4:15 PM	8	8	1	0	4	4	1	0	6	28	15	0	2	26	8	0	111
4:30 PM	10	8	2	0	6	4	2	0	4	26	14	0	1	45	16	0	138
4:45 PM	10	9	2	0	4	4	9	1	1	35	14	0	2	25	14	0	130
5:00 PM	13	6	0	0	2	0	5	0	6	30	19	0	4	50	16	0	151
5:15 PM	11	13	0	0	7	5	7	1	5	31	13	0	2	26	15	0	136
5:30 PM	9	12	2	0	6	3	3	0	6	21	15	0	3	29	14	1	124
5:45 PM	9	7	5	0	8	6	2	1	6	29	22	0	3	29	11	0	138
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	80	74	15	0	48	29	34	4	34	225	126	0	20	252	112	1	1054
APPROACH %'s :	47.34%	43.79%	8.88%	0.00%	41.74%	25.22%	29.57%	3.48%	8.83%	58.44%	32.73%	0.00%	5.19%	65.45%	29.09%	0.26%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	44	36	4	0	19	13	23	2	16	122	60	0	9	146	61	0	555
PEAK HR FACTOR :	0.846	0.692	0.500	0.000	0.679	0.650	0.639	0.500	0.667	0.871	0.789	0.000	0.563	0.730	0.953	0.000	0.919
	0.875				0.713				0.900				0.771				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Los Coyotes Diagonal & Spring St
City: Long Beach
Control: Signalized

Project ID: 18-05307-080
Date: 5/10/2018

Total

NS/EW Streets:	Los Coyotes Diagonal				Los Coyotes Diagonal				Spring St				Spring St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	73	32	0	0	155	68	0	20	85	2	0	37	234	0	1	708
7:15 AM	7	121	69	0	1	209	92	0	21	146	2	0	35	287	1	1	992
7:30 AM	8	119	69	0	2	204	86	0	16	180	2	0	50	379	5	0	1120
7:45 AM	5	126	39	0	2	179	110	0	26	84	1	1	51	410	4	1	1039
8:00 AM	7	134	35	0	4	184	71	0	23	89	4	1	38	270	4	1	865
8:15 AM	6	124	33	0	1	201	71	0	26	99	3	1	36	264	4	1	870
8:30 AM	2	148	37	0	4	171	85	1	28	92	5	1	44	279	7	1	905
8:45 AM	8	149	42	0	2	168	101	1	19	99	2	0	38	208	3	4	844
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	44	994	356	0	16	1471	684	2	179	874	21	4	329	2331	28	10	7343
APPROACH %'s :	3.16%	71.31%	25.54%	0.00%	0.74%	67.69%	31.48%	0.09%	16.60%	81.08%	1.95%	0.37%	12.19%	86.40%	1.04%	0.37%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	27	500	212	0	9	776	359	0	86	499	9	2	174	1346	14	3	4016
PEAK HR FACTOR :	0.844	0.933	0.768	0.000	0.563	0.928	0.816	0.000	0.827	0.693	0.563	0.500	0.853	0.821	0.700	0.750	0.896
	0.938				0.947				0.753				0.825				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	191	38	0	0	148	45	0	53	271	4	0	32	193	2	1	980
4:15 PM	6	219	39	0	4	159	43	0	51	286	8	1	38	178	11	7	1050
4:30 PM	2	209	33	0	7	158	36	0	47	326	9	1	33	205	5	1	1072
4:45 PM	5	201	45	0	8	131	42	0	50	256	4	1	33	178	8	5	967
5:00 PM	3	192	33	0	6	136	36	0	50	333	5	0	40	207	10	0	1051
5:15 PM	12	231	39	0	2	170	41	0	55	319	10	0	43	182	6	4	1114
5:30 PM	2	217	35	0	7	161	36	0	49	329	8	1	32	207	5	1	1090
5:45 PM	7	228	48	0	8	147	47	0	57	257	4	1	41	177	8	5	1035
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	39	1688	310	0	42	1210	326	0	412	2377	52	5	292	1527	55	24	8359
APPROACH %'s :	1.91%	82.87%	15.22%	0.00%	2.66%	76.68%	20.66%	0.00%	14.48%	83.52%	1.83%	0.18%	15.38%	80.45%	2.90%	1.26%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	24	868	155	0	23	614	160	0	211	1238	27	2	156	773	29	10	4290
PEAK HR FACTOR :	0.500	0.939	0.807	0.000	0.719	0.903	0.851	0.000	0.925	0.929	0.675	0.500	0.907	0.934	0.725	0.500	0.963
	0.925				0.935				0.952				0.942				

National Data & Surveying Services

Intersection Turning Movement Count

Location: West Campus Dr & 7th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-106
Date: 5/23/2018

Total

NS/EW Streets:	West Campus Dr				West Campus Dr				7th St				7th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	1	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	4	0	4	0	7	601	0	1	0	543	26	0	1186
7:15 AM	0	0	0	0	5	0	5	0	16	637	0	0	0	577	54	0	1294
7:30 AM	0	0	0	0	6	0	5	0	26	654	0	2	0	615	60	0	1368
7:45 AM	0	0	0	0	4	0	11	0	28	603	0	0	0	626	62	0	1334
8:00 AM	0	0	0	0	5	0	14	0	31	661	0	0	0	570	69	0	1350
8:15 AM	0	0	0	0	7	0	16	0	41	574	0	1	0	566	62	0	1267
8:30 AM	0	0	0	0	14	0	8	0	25	598	0	0	0	543	61	0	1249
8:45 AM	0	0	0	0	9	0	23	0	35	535	0	1	0	511	66	0	1180
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	54	0	86	0	209	4863	0	5	0	4551	460	0	10228
APPROACH %'s :					38.57%	0.00%	61.43%	0.00%	4.12%	95.78%	0.00%	0.10%	0.00%	90.82%	9.18%	0.00%	
PEAK HR :	**07:15 AM - 08:15 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	20	0	35	0	101	2555	0	2	0	2388	245	0	5346
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.833	0.000	0.625	0.000	0.815	0.966	0.000	0.250	0.000	0.954	0.888	0.000	0.977
					0.724				0.960				0.957				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	0.5	0	1	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	48	0	34	0	30	379	0	6	0	409	20	0	926
4:15 PM	0	0	0	0	32	0	24	0	17	338	0	4	0	413	30	0	858
4:30 PM	0	0	0	0	39	0	27	0	31	540	0	3	0	391	21	0	1052
4:45 PM	0	0	0	0	74	0	23	0	32	645	0	0	0	449	46	0	1269
5:00 PM	0	0	0	0	99	0	35	0	34	590	0	0	0	406	36	0	1200
5:15 PM	0	0	0	0	72	0	23	0	31	626	0	1	0	403	39	0	1195
5:30 PM	0	0	0	0	46	0	21	0	31	543	0	1	0	389	30	0	1061
5:45 PM	0	0	0	0	38	0	17	0	33	535	0	3	0	439	51	0	1116
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	448	0	204	0	239	4196	0	18	0	3299	273	0	8677
APPROACH %'s :					68.71%	0.00%	31.29%	0.00%	5.37%	94.23%	0.00%	0.40%	0.00%	92.36%	7.64%	0.00%	
PEAK HR :	**04:45 PM - 05:45 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	291	0	102	0	128	2404	0	2	0	1647	151	0	4725
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.735	0.000	0.729	0.000	0.941	0.932	0.000	0.500	0.000	0.917	0.821	0.000	0.931
					0.733				0.936				0.908				

National Data & Surveying Services

Intersection Turning Movement Count

Location: East Campus Rd & 7th St
City: Long Beach
Control: Signalized

Project ID: 18-05307-107
Date: 5/23/2018

Total

NS/EW Streets:	East Campus Rd				East Campus Rd				7th St				7th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0.5	0.5	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	5	2	0	3	2	2	0	3	608	2	0	4	537	6	0	1176
7:15 AM	4	4	6	0	2	0	7	0	10	625	5	0	6	653	17	4	1343
7:30 AM	10	7	2	0	6	2	13	0	19	620	18	0	8	641	20	7	1373
7:45 AM	25	15	4	0	8	8	15	0	22	565	18	0	8	613	28	6	1335
8:00 AM	16	10	3	0	6	4	8	0	19	639	5	0	6	649	31	0	1396
8:15 AM	13	9	2	0	5	2	9	0	20	553	3	1	6	574	23	3	1223
8:30 AM	10	4	4	0	9	3	10	0	26	585	5	0	8	606	28	6	1304
8:45 AM	7	8	2	0	18	3	13	0	28	513	5	0	2	554	50	3	1206
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	87	62	25	0	57	24	77	0	147	4708	61	1	48	4827	203	29	10356
APPROACH %'s :	50.00%	35.63%	14.37%	0.00%	36.08%	15.19%	48.73%	0.00%	2.99%	95.75%	1.24%	0.02%	0.94%	94.52%	3.97%	0.57%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	55	36	15	0	22	14	43	0	70	2449	46	0	28	2556	96	17	5447
PEAK HR FACTOR :	0.550	0.600	0.625	0.000	0.688	0.438	0.717	0.000	0.795	0.958	0.639	0.000	0.875	0.979	0.774	0.607	0.975
	0.602				0.637				0.967				0.983				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0.5	0.5	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	8	10	0	24	7	17	0	15	367	8	0	19	424	16	3	923
4:15 PM	4	5	3	0	20	12	17	0	11	370	6	0	20	404	18	5	895
4:30 PM	4	9	11	0	38	8	15	0	16	587	12	0	6	417	26	6	1155
4:45 PM	8	13	5	0	32	7	28	0	27	688	4	0	15	436	20	4	1287
5:00 PM	2	4	4	0	59	24	33	0	18	629	9	0	11	412	17	0	1222
5:15 PM	1	8	2	0	21	13	23	0	16	693	8	0	7	392	25	0	1209
5:30 PM	4	7	1	0	25	7	26	0	18	557	12	0	15	412	32	2	1118
5:45 PM	1	4	2	0	23	9	19	0	21	538	7	1	18	488	36	1	1168
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	58	38	0	242	87	178	0	142	4429	66	1	111	3385	190	21	8977
APPROACH %'s :	23.20%	46.40%	30.40%	0.00%	47.73%	17.16%	35.11%	0.00%	3.06%	95.49%	1.42%	0.02%	2.99%	91.31%	5.13%	0.57%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	15	34	22	0	150	52	99	0	77	2597	33	0	39	1657	88	10	4873
PEAK HR FACTOR :	0.469	0.654	0.500	0.000	0.636	0.542	0.750	0.000	0.713	0.937	0.688	0.000	0.650	0.950	0.846	0.417	0.947
	0.683				0.649				0.941				0.944				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Palo Verde Ave & Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 18-05307-081
Date: 5/10/2018

Total

NS/EW Streets:	Palo Verde Ave				Palo Verde Ave				Wardlow Rd				Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	23	15	0	13	39	0	0	0	96	13	0	25	193	10	0	437
7:15 AM	21	50	11	0	26	91	1	0	0	128	37	0	41	214	14	0	634
7:30 AM	28	75	24	0	44	107	0	0	2	199	46	0	33	233	16	0	807
7:45 AM	25	80	9	0	21	81	2	0	0	135	15	0	35	248	15	0	666
8:00 AM	14	34	10	0	19	62	0	0	4	96	13	1	34	229	20	0	536
8:15 AM	17	50	6	0	19	58	2	0	3	113	22	0	22	229	13	0	554
8:30 AM	20	69	13	0	27	91	1	0	2	101	30	1	24	189	17	0	585
8:45 AM	22	84	14	0	31	88	0	0	3	113	30	0	33	177	22	0	617
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	157	465	102	0	200	617	6	0	14	981	206	2	247	1712	127	0	4836
APPROACH %'s :	21.69%	64.23%	14.09%	0.00%	24.30%	74.97%	0.73%	0.00%	1.16%	81.55%	17.12%	0.17%	11.84%	82.07%	6.09%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	88	239	54	0	110	341	3	0	6	558	111	1	143	924	65	0	2643
PEAK HR FACTOR :	0.786	0.747	0.563	0.000	0.625	0.797	0.375	0.000	0.375	0.701	0.603	0.250	0.872	0.931	0.813	0.000	0.819
	0.750				0.752				0.684				0.950				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	25	106	29	0	19	81	1	0	6	199	23	1	24	140	29	0	683
4:15 PM	30	107	43	0	27	77	2	0	6	191	29	1	19	162	17	0	711
4:30 PM	20	103	34	0	21	66	4	0	6	203	11	0	21	139	17	0	645
4:45 PM	26	118	33	0	13	58	0	0	5	221	25	0	20	177	18	0	714
5:00 PM	17	119	38	0	20	63	2	0	5	245	16	0	23	147	25	0	720
5:15 PM	26	152	43	0	15	81	6	0	1	263	19	0	21	186	22	0	835
5:30 PM	21	121	40	0	33	82	5	0	3	232	23	0	38	184	21	0	803
5:45 PM	22	135	44	0	21	59	1	0	3	206	25	1	20	186	25	0	748
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	187	961	304	0	169	567	21	0	35	1760	171	3	186	1321	174	0	5859
APPROACH %'s :	12.88%	66.18%	20.94%	0.00%	22.32%	74.90%	2.77%	0.00%	1.78%	89.39%	8.68%	0.15%	11.06%	78.58%	10.35%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	86	527	165	0	89	285	14	0	12	946	83	1	102	703	93	0	3106
PEAK HR FACTOR :	0.827	0.867	0.938	0.000	0.674	0.869	0.583	0.000	0.600	0.899	0.830	0.250	0.671	0.945	0.930	0.000	0.930
	0.880				0.808				0.920				0.924				

National Data & Surveying Services Intersection Turning Movement Count

Location: Palo Verde Ave & Atherton St
City: Long Beach
Control: Signalized

Project ID: 18-05307-082
Date: 5/23/2018

Total

NS/EW Streets:	Palo Verde Ave				Palo Verde Ave				Atherton St				Atherton St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1.5	1.5	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	17	41	2	0	13	59	41	0	20	15	14	0	4	45	11	0	282
7:15 AM	25	55	3	0	13	77	53	0	28	20	22	0	7	67	31	0	401
7:30 AM	32	61	3	0	13	100	90	0	36	29	25	0	13	90	22	0	514
7:45 AM	37	59	5	0	15	135	91	0	25	26	33	0	13	98	21	0	558
8:00 AM	24	41	4	0	15	126	65	0	24	37	44	0	17	81	10	0	488
8:15 AM	33	53	3	0	20	114	74	0	22	31	30	0	16	73	25	0	494
8:30 AM	31	73	4	0	31	163	89	0	31	34	42	0	20	94	26	1	639
8:45 AM	23	61	7	0	33	166	94	0	33	49	36	0	30	102	20	0	654
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	222	444	31	0	153	940	597	0	219	241	246	0	120	650	166	1	4030
APPROACH %'s :	31.85%	63.70%	4.45%	0.00%	9.05%	55.62%	35.33%	0.00%	31.02%	34.14%	34.84%	0.00%	12.81%	69.37%	17.72%	0.11%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	111	228	18	0	99	569	322	0	110	151	152	0	83	350	81	1	2275
PEAK HR FACTOR :	0.841	0.781	0.643	0.000	0.750	0.857	0.856	0.000	0.833	0.770	0.864	0.000	0.692	0.858	0.779	0.250	0.870
	0.826				0.845				0.875				0.847				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1.5	1.5	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	67	172	18	0	28	103	50	0	155	115	40	0	4	37	21	1	811
4:15 PM	53	132	14	1	40	148	91	0	99	72	45	0	19	69	25	2	810
4:30 PM	57	167	13	0	25	108	70	0	148	90	51	0	10	60	20	0	819
4:45 PM	53	196	12	0	31	134	65	0	157	109	48	0	9	77	21	1	913
5:00 PM	88	220	27	0	31	102	62	0	182	142	56	0	8	54	11	3	986
5:15 PM	62	148	30	2	31	130	69	1	118	92	67	0	21	71	23	1	866
5:30 PM	70	140	17	0	21	106	58	0	133	88	53	0	14	47	21	0	768
5:45 PM	60	150	12	1	25	129	64	0	97	82	51	0	19	70	16	4	780
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	510	1325	143	4	232	960	529	1	1089	790	411	0	104	485	158	12	6753
APPROACH %'s :	25.73%	66.85%	7.21%	0.20%	13.47%	55.75%	30.72%	0.06%	47.55%	34.50%	17.95%	0.00%	13.70%	63.90%	20.82%	1.58%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	260	731	82	2	118	474	266	1	605	433	222	0	48	262	75	5	3584
PEAK HR FACTOR :	0.739	0.831	0.683	0.250	0.952	0.884	0.950	0.250	0.831	0.762	0.828	0.000	0.571	0.851	0.815	0.417	0.909
	0.802				0.930				0.829				0.841				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Los Coyotes Diagonal & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05307-083
Date: 5/10/2018

Total

NS/EW Streets:	Los Coyotes Diagonal				Los Coyotes Diagonal				Carson St				Carson St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	3	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	37	4	73	0	23	46	5	0	2	101	40	1	84	217	8	0	641
7:15 AM	48	15	82	0	27	75	5	0	2	108	67	2	109	243	9	1	793
7:30 AM	60	18	123	0	32	64	4	0	0	117	81	1	151	254	8	0	913
7:45 AM	71	24	95	0	21	57	4	0	0	116	56	1	143	313	11	0	912
8:00 AM	50	14	93	0	18	41	3	0	5	125	60	1	102	286	12	0	810
8:15 AM	72	17	80	0	30	50	9	0	1	142	79	3	102	277	11	0	873
8:30 AM	82	16	85	0	15	56	5	0	1	100	85	2	137	258	15	0	857
8:45 AM	77	32	117	0	18	46	7	0	3	156	70	2	99	205	9	2	843
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	497	140	748	0	184	435	42	0	14	965	538	13	927	2053	83	3	6642
APPROACH %'s :	35.88%	10.11%	54.01%	0.00%	27.84%	65.81%	6.35%	0.00%	0.92%	63.07%	35.16%	0.85%	30.23%	66.96%	2.71%	0.10%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	253	73	391	0	101	212	20	0	6	500	276	6	498	1130	42	0	3508
PEAK HR FACTOR :	0.878	0.760	0.795	0.000	0.789	0.828	0.556	0.000	0.300	0.880	0.852	0.500	0.825	0.903	0.875	0.000	0.961
	0.892				0.833				0.876				0.894				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	3	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	90	99	145	0	26	43	12	0	6	205	53	1	126	214	18	2	1040
4:15 PM	67	49	151	1	26	43	4	0	3	260	49	3	118	261	16	3	1054
4:30 PM	58	38	145	1	20	50	8	0	6	216	43	3	116	175	20	0	899
4:45 PM	60	47	148	0	17	34	6	0	5	242	48	4	114	258	18	2	1003
5:00 PM	78	39	141	0	30	41	4	0	4	244	38	4	107	260	20	0	1010
5:15 PM	94	58	140	2	28	52	15	0	11	260	50	0	106	220	23	3	1062
5:30 PM	87	56	154	0	16	33	5	0	5	253	42	2	119	258	22	0	1052
5:45 PM	88	61	183	2	27	31	11	0	4	266	48	3	110	268	26	2	1130
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	622	447	1207	6	190	327	65	0	44	1946	371	20	916	1914	163	12	8250
APPROACH %'s :	27.26%	19.59%	52.89%	0.26%	32.65%	56.19%	11.17%	0.00%	1.85%	81.73%	15.58%	0.84%	30.48%	63.69%	5.42%	0.40%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	347	214	618	4	101	157	35	0	24	1023	178	9	442	1006	91	5	4254
PEAK HR FACTOR :	0.923	0.877	0.844	0.500	0.842	0.755	0.583	0.000	0.545	0.961	0.890	0.563	0.929	0.938	0.875	0.417	0.941
	0.885				0.771				0.961				0.951				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Studebaker Rd & Spring St
City: Long Beach
Control: Signalized

Project ID: 18-05307-084
Date: 5/10/2018

Total

NS/EW Streets:	Studebaker Rd				Studebaker Rd				Spring St				Spring St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	11	27	21	0	3	76	18	1	10	66	14	0	23	162	2	7	441
7:15 AM	19	46	33	0	8	113	17	0	8	75	16	0	34	203	6	4	582
7:30 AM	20	41	22	1	18	96	14	0	15	87	19	0	44	222	8	3	610
7:45 AM	26	64	37	0	25	112	18	1	16	104	26	0	34	203	11	5	682
8:00 AM	27	44	29	0	17	97	19	0	11	71	32	0	58	196	3	3	607
8:15 AM	19	53	31	0	19	114	10	1	9	69	28	0	43	157	4	7	564
8:30 AM	29	56	42	0	23	110	25	1	11	83	23	0	45	158	9	2	617
8:45 AM	29	70	46	3	25	87	10	0	17	106	32	1	64	185	7	8	690
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	180	401	261	4	138	805	131	4	97	661	190	1	345	1486	50	39	4793
APPROACH %'s :	21.28%	47.40%	30.85%	0.47%	12.80%	74.68%	12.15%	0.37%	10.22%	69.65%	20.02%	0.11%	17.97%	77.40%	2.60%	2.03%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	92	195	121	1	68	418	68	1	50	337	93	0	170	824	28	15	2481
PEAK HR FACTOR :	0.852	0.762	0.818	0.250	0.680	0.925	0.895	0.250	0.781	0.810	0.727	0.000	0.733	0.928	0.636	0.750	0.909
	0.805				0.889				0.822				0.936				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	48	154	57	0	17	85	33	0	41	189	42	0	60	173	33	5	937
4:15 PM	48	173	45	1	10	121	22	0	37	211	45	0	59	165	16	5	958
4:30 PM	40	148	57	1	4	113	29	0	30	191	44	0	62	186	26	2	933
4:45 PM	46	167	51	0	14	107	24	0	65	202	57	1	68	160	38	4	1004
5:00 PM	44	174	52	1	14	96	27	1	37	231	48	0	62	213	22	4	1026
5:15 PM	46	227	58	0	14	135	27	0	48	195	55	1	65	179	16	5	1071
5:30 PM	45	228	51	1	12	112	26	0	57	193	55	0	67	196	32	3	1078
5:45 PM	56	208	62	0	19	119	23	1	55	210	55	0	62	165	37	3	1075
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	373	1479	433	4	104	888	211	2	370	1622	401	2	505	1437	220	31	8082
APPROACH %'s :	16.30%	64.61%	18.92%	0.17%	8.63%	73.69%	17.51%	0.17%	15.45%	67.72%	16.74%	0.08%	23.03%	65.53%	10.03%	1.41%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	191	837	223	2	59	462	103	2	197	829	213	1	256	753	107	15	4250
PEAK HR FACTOR :	0.853	0.918	0.899	0.500	0.776	0.856	0.954	0.500	0.864	0.897	0.968	0.250	0.955	0.884	0.723	0.750	0.986
	0.946				0.889				0.969				0.939				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Studebaker Rd & Willow St
City: Long Beach
Control: Signalized

Project ID: 18-05307-085
Date: 5/10/2018

Total

NS/EW Streets:	Studebaker Rd				Studebaker Rd				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	93	43	0	29	134	19	0	9	68	13	0	27	334	16	0	797
7:15 AM	26	154	56	0	39	161	31	0	20	121	7	2	55	370	20	0	1062
7:30 AM	21	140	72	0	45	265	34	0	22	111	12	0	65	376	25	0	1188
7:45 AM	21	95	55	0	40	248	40	0	21	90	23	1	60	417	30	0	1141
8:00 AM	12	131	50	0	20	178	28	1	23	88	15	0	60	412	35	0	1053
8:15 AM	25	115	59	0	40	145	19	1	23	88	12	0	62	382	31	1	1003
8:30 AM	20	116	44	0	27	166	20	0	22	91	23	0	57	290	26	0	902
8:45 AM	16	129	56	0	42	164	32	0	20	91	14	1	62	316	23	1	967
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	153	973	435	0	282	1461	223	2	160	748	119	4	448	2897	206	2	8113
APPROACH %'s :	9.80%	62.33%	27.87%	0.00%	14.33%	74.24%	11.33%	0.10%	15.52%	72.55%	11.54%	0.39%	12.61%	81.54%	5.80%	0.06%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	80	520	233	0	144	852	133	1	86	410	57	3	240	1575	110	0	4444
PEAK HR FACTOR :	0.769	0.844	0.809	0.000	0.800	0.804	0.831	0.250	0.935	0.847	0.620	0.375	0.923	0.944	0.786	0.000	0.935
	0.882				0.821				0.927				0.949				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	31	210	75	1	34	128	20	0	38	183	17	0	63	223	41	4	1068
4:15 PM	20	161	60	0	31	165	25	0	37	214	27	0	64	297	56	2	1159
4:30 PM	20	179	73	0	31	164	19	0	36	166	17	0	59	232	48	3	1047
4:45 PM	15	169	79	0	39	143	19	2	48	242	24	0	61	295	47	0	1183
5:00 PM	26	220	103	0	34	151	23	1	45	225	24	0	68	285	66	4	1275
5:15 PM	34	218	64	0	34	168	28	2	51	243	26	1	64	311	64	0	1308
5:30 PM	17	226	74	1	39	170	18	1	48	228	26	0	81	311	92	1	1333
5:45 PM	39	203	65	1	36	162	22	0	45	206	26	1	72	341	82	0	1301
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	202	1586	593	3	278	1251	174	6	348	1707	187	2	532	2295	496	14	9674
APPROACH %'s :	8.47%	66.53%	24.87%	0.13%	16.27%	73.20%	10.18%	0.35%	15.51%	76.07%	8.33%	0.09%	15.94%	68.77%	14.86%	0.42%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	116	867	306	2	143	651	91	4	189	902	102	2	285	1248	304	5	5217
PEAK HR FACTOR :	0.744	0.959	0.743	0.500	0.917	0.957	0.813	0.500	0.926	0.928	0.981	0.500	0.880	0.915	0.826	0.313	0.978
	0.925				0.958				0.931				0.930				

National Data & Surveying Services

Intersection Turning Movement Count

Location: 7th St & College Park Dr
City: Long Beach
Control: 1-Way Stop(WB)

Project ID: 18-05307-103
Date: 5/23/2018

Total

NS/EW Streets:	7th St				7th St				College Park Dr				College Park Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	145	5	0	5	4	0	0	0	0	0	0	1	0	32	0	192
7:15 AM	0	183	6	0	3	9	0	0	0	0	0	0	3	0	44	0	248
7:30 AM	0	173	4	0	3	11	0	0	0	0	0	0	5	0	46	0	242
7:45 AM	0	202	10	0	11	11	0	0	0	0	0	0	0	0	26	0	260
8:00 AM	0	232	15	0	5	9	0	0	0	0	0	0	2	0	26	0	289
8:15 AM	0	219	13	0	5	13	0	0	0	0	0	0	3	0	31	0	284
8:30 AM	0	233	5	0	5	4	0	0	0	0	0	0	2	0	22	0	271
8:45 AM	0	295	9	0	9	12	0	0	0	0	0	0	2	0	17	0	344
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1682	67	0	46	73	0	0	0	0	0	0	18	0	244	0	2130
APPROACH %'s :	0.00%	96.17%	3.83%	0.00%	38.66%	61.34%	0.00%	0.00%					6.87%	0.00%	93.13%	0.00%	
PEAK HR :	**08:00 AM - 09:00 AM**																TOTAL
PEAK HR VOL :	0	979	42	0	24	38	0	0	0	0	0	0	9	0	96	0	1188
PEAK HR FACTOR :	0.000	0.830	0.700	0.000	0.667	0.731	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.774	0.000	0.863
		0.840				0.738								0.772			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	343	12	0	13	7	0	0	0	0	0	0	1	0	32	0	408
4:15 PM	0	342	15	0	11	8	0	0	0	0	0	0	0	0	20	0	396
4:30 PM	0	360	15	1	7	15	0	0	0	0	0	0	1	0	19	0	418
4:45 PM	0	306	16	0	17	13	0	0	0	0	0	0	1	0	26	0	379
5:00 PM	0	283	17	0	18	12	0	0	0	0	0	0	2	0	22	0	354
5:15 PM	0	262	14	0	21	7	0	0	0	0	0	0	1	0	25	0	330
5:30 PM	0	308	19	0	15	7	0	0	0	0	0	0	0	0	25	0	374
5:45 PM	0	321	11	0	16	6	0	0	0	0	0	0	0	0	28	0	382
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2525	119	1	118	75	0	0	0	0	0	0	6	0	197	0	3041
APPROACH %'s :	0.00%	95.46%	4.50%	0.04%	61.14%	38.86%	0.00%	0.00%					2.96%	0.00%	97.04%	0.00%	
PEAK HR :	**04:00 PM - 05:00 PM**																TOTAL
PEAK HR VOL :	0	1351	58	1	48	43	0	0	0	0	0	0	3	0	97	0	1601
PEAK HR FACTOR :	0.000	0.938	0.906	0.250	0.706	0.717	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.758	0.000	0.958
		0.938				0.758								0.758			

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

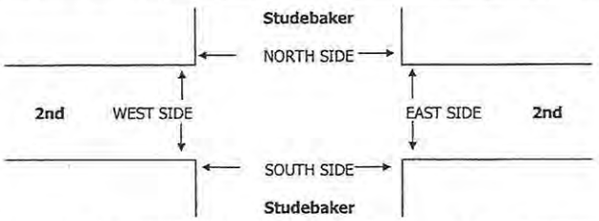
DATE:	LOCATION:	Long Beach	PROJECT #:	SC1123
Tue, Nov 15, 16	NORTH & SOUTH:	Studebaker	LOCATION #:	19
	EAST & WEST:	2nd	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W ▲ N S ▼ E ►

☑ Add U-Turns to Left Turns

		NORTHBOUND Studebaker			SOUTHBOUND Studebaker			EASTBOUND 2nd			WESTBOUND 2nd				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	X	X	X	2	X	2	2	2	X	X	3	1		0	0	0	0	
AM	7:00 AM	0	0	0	165	0	145	244	159	0	0	185	91	989	0	0	0	0	0
	7:15 AM	0	0	0	154	0	135	233	246	0	0	214	127	1,109	0	0	0	0	0
	7:30 AM	0	0	0	142	0	169	251	237	0	0	250	133	1,182	0	0	0	0	0
	7:45 AM	0	0	0	120	0	160	232	222	0	0	238	114	1,086	0	0	0	0	0
	8:00 AM	0	0	0	116	0	203	218	174	0	0	248	113	1,072	0	0	0	0	0
	8:15 AM	0	0	0	86	0	157	200	171	0	0	131	73	818	0	0	0	0	0
	8:30 AM	0	0	0	71	0	142	222	133	0	0	209	106	883	0	0	0	0	0
	8:45 AM	0	0	0	63	0	196	166	119	0	0	213	120	877	0	0	0	0	0
	VOLUMES	0	0	0	917	0	1,307	1,766	1,461	0	0	1,688	877	8,016	0	0	0	0	0
	APPROACH %	0%	0%	0%	41%	0%	59%	55%	45%	0%	0%	66%	34%						
	APP/DEPART	0	/	2,643	2,224	/	0	3,227	/	2,378	2,565	/	2,995	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	532	0	667	934	879	0	0	950	487	4,449					
	APPROACH %	0%	0%	0%	44%	0%	56%	52%	48%	0%	0%	66%	34%						
	PEAK HR FACTOR		0.000			0.940			0.929			0.938		0.941					
	APP/DEPART	0	/	1,421	1,199	/	0	1,813	/	1,411	1,437	/	1,617	0					
PM	4:00 PM	0	0	0	80	0	267	286	174	0	0	187	136	1,130	0	0	0	0	0
	4:15 PM	0	0	0	89	0	246	276	185	0	0	200	138	1,134	0	0	0	0	0
	4:30 PM	0	0	0	82	0	216	198	126	0	0	169	141	932	0	0	0	0	0
	4:45 PM	0	0	0	90	0	225	315	217	0	0	243	177	1,267	0	0	0	0	0
	5:00 PM	0	0	0	103	0	272	313	170	0	0	254	182	1,294	0	0	0	0	0
	5:15 PM	0	0	0	132	0	231	288	177	0	0	277	174	1,279	0	0	0	0	0
	5:30 PM	0	0	0	99	0	204	221	229	0	0	252	111	1,116	0	0	0	0	0
	5:45 PM	0	0	0	101	0	192	233	241	0	0	237	76	1,080	0	0	0	0	0
	VOLUMES	0	0	0	776	0	1,853	2,130	1,519	0	0	1,819	1,135	9,232	0	0	0	0	0
	APPROACH %	0%	0%	0%	30%	0%	70%	58%	42%	0%	0%	62%	38%						
	APP/DEPART	0	/	3,265	2,629	/	0	3,649	/	2,295	2,954	/	3,672	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	0	424	0	932	1,137	793	0	0	1,026	644	4,956					
	APPROACH %	0%	0%	0%	31%	0%	69%	59%	41%	0%	0%	61%	39%						
	PEAK HR FACTOR		0.000			0.904			0.907			0.926		0.957					
	APP/DEPART	0	/	1,781	1,356	/	0	1,930	/	1,217	1,670	/	1,958	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	2	1	1	4	0	0	1	0	1	0	2	0	1	3
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	7:45 AM	2	1	0	0	3	1	0	0	0	1	1	1	0	0	2
	8:00 AM	0	1	0	1	2	0	0	0	0	0	0	1	0	1	2
	8:15 AM	0	1	0	1	2	0	0	0	0	0	0	1	0	1	2
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	TOTAL	3	5	2	3	13	1	0	1	0	2	2	5	1	3	11
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB Ramps & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05723-007
Date: 11/1/2018

Total

NS/EW Streets:	I-605 SB Ramps					I-605 SB Ramps					Carson St					Carson St				
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	1	0	0	2	1.5	1.5	0	0	0	4	0	0	0	0	2.5	0.5	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	9	0	8	81	20	138	0	2	0	174	18	0	44	0	215	108	0	817
7:15 AM	0	0	8	0	17	95	13	160	0	1	0	180	15	0	60	0	199	119	0	867
7:30 AM	0	0	9	0	8	115	17	183	0	0	0	183	17	0	52	0	274	96	0	954
7:45 AM	0	0	14	0	6	146	17	173	0	0	0	175	25	0	51	0	281	95	0	983
8:00 AM	0	0	15	0	6	128	31	166	0	1	0	181	20	0	52	0	254	99	0	953
8:15 AM	0	0	14	0	7	82	27	174	0	0	0	176	18	0	69	0	268	76	0	911
8:30 AM	0	0	11	0	13	113	32	185	0	0	0	183	15	0	54	0	230	91	0	927
8:45 AM	0	0	23	0	10	112	45	153	0	0	0	211	34	0	51	0	243	88	0	970
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	103	0	75	872	202	1332	0	4	0	1463	162	0	433	0	1964	772	0	7382
APPROACH %'s :	0.00%	0.00%	57.87%	0.00%	42.13%	36.18%	8.38%	55.27%	0.00%	0.17%	0.00%	71.09%	7.87%	0.00%	21.04%	0.00%	71.78%	28.22%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																			TOTAL
PEAK HR VOL :	0	0	52	0	27	471	92	696	0	1	0	715	80	0	224	0	1077	366	0	3801
PEAK HR FACTOR :	0.000	0.000	0.867	0.000	0.844	0.807	0.742	0.951	0.000	0.250	0.000	0.977	0.800	0.000	0.812	0.000	0.958	0.924	0.000	0.967
			0.940					0.938					0.969				0.959			

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	0	0	1	0	0	2	1.5	1.5	0	0	0	4	0	0	0	0	2.5	0.5	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	53	0	29	165	40	119	0	0	0	318	45	0	44	0	252	81	0	1146
4:15 PM	0	0	53	0	29	160	48	146	0	0	0	322	37	0	57	0	253	85	0	1190
4:30 PM	0	0	49	0	38	180	60	146	0	1	0	346	35	0	51	0	255	81	0	1242
4:45 PM	0	0	56	0	40	192	60	147	0	0	0	316	41	0	49	0	245	95	0	1241
5:00 PM	0	0	47	0	43	180	62	153	0	0	0	356	39	0	63	0	273	74	0	1290
5:15 PM	0	0	75	0	39	221	61	176	0	0	0	358	53	0	47	0	256	79	0	1365
5:30 PM	0	0	87	0	39	228	52	142	0	0	0	366	36	0	29	0	237	69	0	1285
5:45 PM	0	0	85	0	46	240	60	136	0	0	0	333	32	0	53	0	249	77	0	1311
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	SL2	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	505	0	303	1566	443	1165	0	1	0	2715	318	0	393	0	2020	641	0	10070
APPROACH %'s :	0.00%	0.00%	62.50%	0.00%	37.50%	49.32%	13.95%	36.69%	0.00%	0.03%	0.00%	79.25%	9.28%	0.00%	11.47%	0.00%	75.91%	24.09%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																			TOTAL
PEAK HR VOL :	0	0	294	0	167	869	235	607	0	0	0	1413	160	0	192	0	1015	299	0	5251
PEAK HR FACTOR :	0.000	0.000	0.845	0.000	0.908	0.905	0.948	0.862	0.000	0.000	0.000	0.965	0.755	0.000	0.762	0.000	0.929	0.946	0.000	0.962
			0.880					0.934					0.963				0.947			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Ramps & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05723-008
Date: 11/1/2018

Total

NS/EW Streets:	I-605 NB Ramps					I-605 NB Ramps				Carson St					Carson St				
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND				
	2	0	2	0	0	0	0	0	0	0	4	0	0	0	0	2	1	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
7:00 AM	49	0	55	0	0	0	0	0	0	0	166	0	0	102	0	274	183	0	829
7:15 AM	61	0	71	0	0	0	0	0	0	0	172	0	0	112	0	279	214	0	909
7:30 AM	73	0	80	0	0	0	0	0	0	0	215	0	0	101	0	320	220	0	1009
7:45 AM	72	0	92	0	0	0	0	0	0	0	261	0	0	83	0	294	206	0	1008
8:00 AM	63	0	72	0	0	0	0	0	0	0	208	0	0	106	0	282	173	0	904
8:15 AM	95	0	82	0	0	0	0	0	0	0	176	0	0	101	0	246	155	0	855
8:30 AM	67	0	91	0	0	0	0	0	0	0	196	0	0	104	0	266	119	0	843
8:45 AM	69	0	88	0	0	0	0	0	0	0	230	0	0	119	0	242	150	0	898
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	549	0	631	0	0	0	0	0	0	0	1624	0	0	828	0	2203	1420	0	7255
APPROACH %'s :	46.53%	0.00%	53.47%	0.00%	0.00%					0.00%	66.23%	0.00%	0.00%	33.77%	0.00%	60.81%	39.19%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																		TOTAL
PEAK HR VOL :	269	0	315	0	0	0	0	0	0	0	856	0	0	402	0	1175	813	0	3830
PEAK HR FACTOR :	0.921	0.000	0.856	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.820	0.000	0.000	0.897	0.000	0.918	0.924	0.000	0.949
			0.890									0.914				0.920			

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND				
	2	0	2	0	0	0	0	0	0	0	4	0	0	0	0	2	1	0	
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
4:00 PM	91	0	129	0	1	0	0	0	0	0	382	0	0	164	0	259	124	0	1150
4:15 PM	82	0	127	0	0	0	0	0	0	0	406	0	0	138	0	252	104	0	1109
4:30 PM	88	0	141	0	0	0	0	0	0	0	427	0	0	159	0	266	146	0	1227
4:45 PM	84	0	124	0	0	0	0	0	0	0	431	0	0	145	0	238	159	0	1181
5:00 PM	80	0	123	0	0	0	0	0	0	0	447	0	0	159	0	253	143	0	1205
5:15 PM	76	0	105	0	0	0	0	0	0	0	473	0	0	174	0	263	171	0	1262
5:30 PM	68	0	112	0	0	0	0	0	0	0	490	0	0	184	0	254	177	0	1285
5:45 PM	75	0	138	0	0	0	0	0	0	0	478	0	0	161	0	250	173	0	1275
	NL	NT	NR	NU	NR2	SL	ST	SR	SU	EL	ET	ER	EU	ET2	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	644	0	999	0	1	0	0	0	0	0	3534	0	0	1284	0	2035	1197	0	9694
APPROACH %'s :	39.17%	0.00%	60.77%	0.00%	0.06%					0.00%	73.35%	0.00%	0.00%	26.65%	0.00%	62.96%	37.04%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																		TOTAL
PEAK HR VOL :	299	0	478	0	0	0	0	0	0	0	1888	0	0	678	0	1020	664	0	5027
PEAK HR FACTOR :	0.934	0.000	0.866	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.963	0.000	0.000	0.921	0.000	0.970	0.938	0.000	0.978
			0.912									0.952				0.970			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Norwalk Blvd & Carson St
City: Long Beach
Control: Signalized

Project ID: 18-05307-093
Date: 5/23/2018

Total

NS/EW Streets:	Norwalk Blvd				Norwalk Blvd				Carson St				Carson St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	35	66	21	0	19	59	20	0	7	127	25	0	13	216	6	4	618
7:15 AM	55	134	25	0	20	107	28	0	10	115	33	0	23	228	16	1	795
7:30 AM	48	130	32	0	33	142	32	0	12	170	46	1	40	270	19	1	976
7:45 AM	65	103	37	0	31	138	33	0	19	151	35	0	21	238	14	3	888
8:00 AM	41	100	26	0	23	85	27	0	23	166	40	2	38	260	15	2	848
8:15 AM	44	88	32	0	34	77	22	0	28	122	20	0	24	187	29	5	712
8:30 AM	40	84	21	0	37	82	31	0	20	128	30	2	36	203	16	2	732
8:45 AM	28	114	33	0	42	116	25	0	29	144	24	0	36	147	21	6	765
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	356	819	227	0	239	806	218	0	148	1123	253	5	231	1749	136	24	6334
APPROACH %'s :	25.39%	58.42%	16.19%	0.00%	18.92%	63.82%	17.26%	0.00%	9.68%	73.45%	16.55%	0.33%	10.79%	81.73%	6.36%	1.12%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	209	467	120	0	107	472	120	0	64	602	154	3	122	996	64	7	3507
PEAK HR FACTOR :	0.804	0.871	0.811	0.000	0.811	0.831	0.909	0.000	0.696	0.885	0.837	0.375	0.763	0.922	0.842	0.583	0.898
	0.930				0.844				0.891				0.901				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	51	104	34	0	30	87	23	0	30	188	43	6	42	163	34	3	838
4:15 PM	61	143	34	0	40	102	29	0	39	193	37	2	45	148	38	5	916
4:30 PM	53	132	28	0	29	100	25	0	40	220	33	1	45	186	26	4	922
4:45 PM	56	127	29	0	41	126	26	0	34	223	46	1	39	198	31	5	982
5:00 PM	46	161	36	0	42	93	26	0	46	228	40	4	36	178	25	4	965
5:15 PM	57	148	51	0	32	122	23	0	41	242	49	2	47	166	27	6	1013
5:30 PM	61	171	41	0	30	106	28	0	47	240	51	1	56	193	23	5	1053
5:45 PM	53	183	36	0	39	116	32	0	39	205	52	4	46	160	37	5	1007
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	438	1169	289	0	283	852	212	0	316	1739	351	21	356	1392	241	37	7696
APPROACH %'s :	23.10%	61.66%	15.24%	0.00%	21.01%	63.25%	15.74%	0.00%	13.02%	71.65%	14.46%	0.87%	17.57%	68.71%	11.90%	1.83%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	217	663	164	0	143	437	109	0	173	915	192	11	185	697	112	20	4038
PEAK HR FACTOR :	0.889	0.906	0.804	0.000	0.851	0.895	0.852	0.000	0.920	0.945	0.923	0.688	0.826	0.903	0.757	0.833	0.959
	0.956				0.921				0.952				0.915				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Norwalk Blvd & Cerritos Ave
City: Long Beach
Control: Signalized

Project ID: 18-05307-097
Date: 5/23/2018

Total

NS/EW Streets:	Norwalk Blvd				Norwalk Blvd				Cerritos Ave				Cerritos Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	23	77	76	2	15	124	25	0	19	191	36	0	52	205	11	0	856
7:15 AM	34	150	96	5	29	165	18	1	19	215	25	0	50	174	26	1	1008
7:30 AM	46	174	79	1	45	233	16	0	56	211	35	0	54	212	51	4	1217
7:45 AM	40	201	93	6	21	265	24	0	35	207	39	0	57	231	53	9	1281
8:00 AM	22	104	56	1	13	157	28	0	10	220	42	0	56	203	14	0	926
8:15 AM	43	105	77	7	16	131	20	1	22	247	49	0	47	162	8	0	935
8:30 AM	44	94	81	3	11	94	31	0	14	179	50	0	65	205	16	4	891
8:45 AM	49	91	86	5	10	125	22	0	17	169	69	0	57	143	15	0	858
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	301	996	644	30	160	1294	184	2	192	1639	345	0	438	1535	194	18	7972
APPROACH %'s :	15.27%	50.53%	32.67%	1.52%	9.76%	78.90%	11.22%	0.12%	8.82%	75.32%	15.85%	0.00%	20.05%	70.25%	8.88%	0.82%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	142	629	324	13	108	820	86	1	120	853	141	0	217	820	144	14	4432
PEAK HR FACTOR :	0.772	0.782	0.844	0.542	0.600	0.774	0.768	0.250	0.536	0.969	0.839	0.000	0.952	0.887	0.679	0.389	0.865
	0.815				0.819				0.922				0.854				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	1	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	72	220	100	7	30	157	17	0	45	220	53	0	61	194	35	1	1212
4:15 PM	54	181	79	3	23	148	29	0	44	201	50	0	65	239	41	3	1160
4:30 PM	50	217	92	2	14	128	15	0	46	223	58	1	60	191	25	1	1123
4:45 PM	60	196	76	7	25	168	20	1	39	220	66	1	71	246	29	3	1228
5:00 PM	72	249	113	6	24	166	16	1	44	213	55	0	54	208	35	2	1258
5:15 PM	62	235	87	3	25	160	23	0	45	232	53	1	80	275	47	1	1329
5:30 PM	49	232	95	4	29	169	20	0	47	231	45	0	77	215	44	0	1257
5:45 PM	55	199	99	7	36	179	21	0	32	218	48	0	58	223	29	3	1207
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	474	1729	741	39	206	1275	161	2	342	1758	428	3	526	1791	285	14	9774
APPROACH %'s :	15.89%	57.96%	24.84%	1.31%	12.53%	77.55%	9.79%	0.12%	13.51%	69.46%	16.91%	0.12%	20.11%	68.46%	10.89%	0.54%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	243	912	371	20	103	663	79	2	175	896	219	2	282	944	155	6	5072
PEAK HR FACTOR :	0.844	0.916	0.821	0.714	0.888	0.981	0.859	0.500	0.931	0.966	0.830	0.500	0.881	0.858	0.824	0.500	0.954
	0.878				0.971				0.976				0.860				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Los Alamitos Blvd & Katella Ave
City: Long Beach
Control: Signalized

Project ID: 18-05307-098
Date: 5/23/2018

Total

NS/EW Streets:	Los Alamitos Blvd				Los Alamitos Blvd				Katella Ave				Katella Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	3	1	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	85	185	66	0	17	108	39	0	23	381	64	0	48	292	20	0	1328
7:15 AM	102	240	87	0	24	176	37	0	56	397	56	0	64	303	24	0	1566
7:30 AM	109	296	85	0	48	248	54	0	56	374	42	0	74	321	28	0	1735
7:45 AM	101	243	116	0	54	267	47	0	39	416	62	0	85	336	18	0	1784
8:00 AM	140	224	128	0	42	188	42	0	34	420	64	0	79	320	26	0	1707
8:15 AM	111	224	119	0	46	149	35	0	55	434	80	0	60	281	19	0	1613
8:30 AM	97	162	102	0	43	161	39	0	54	388	75	0	94	307	20	0	1542
8:45 AM	96	161	96	0	28	131	35	0	60	369	91	0	63	251	18	0	1399
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	841	1735	799	0	302	1428	328	0	377	3179	534	0	567	2411	173	0	12674
APPROACH %'s :	24.92%	51.41%	23.67%	0.00%	14.67%	69.39%	15.94%	0.00%	9.22%	77.73%	13.06%	0.00%	17.99%	76.52%	5.49%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	461	987	448	0	190	852	178	0	184	1644	248	0	298	1258	91	0	6839
PEAK HR FACTOR :	0.823	0.834	0.875	0.000	0.880	0.798	0.824	0.000	0.821	0.947	0.775	0.000	0.876	0.936	0.813	0.000	0.958
	0.963				0.829				0.912				0.938				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	3	1	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	110	209	107	0	37	244	50	0	61	366	112	0	85	376	25	0	1782
4:15 PM	99	209	82	0	30	204	36	0	66	394	116	0	95	384	23	0	1738
4:30 PM	116	187	115	0	28	217	51	0	63	375	115	0	96	393	27	0	1783
4:45 PM	115	221	89	0	27	230	43	0	61	365	132	0	99	382	25	0	1789
5:00 PM	104	209	83	0	45	267	47	0	80	339	129	0	81	391	34	0	1809
5:15 PM	95	290	100	0	42	251	41	0	59	345	116	0	78	407	28	0	1852
5:30 PM	114	211	96	0	29	273	46	0	75	348	128	0	79	370	28	0	1797
5:45 PM	89	222	63	0	39	236	33	0	78	370	145	0	87	377	21	0	1760
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	842	1758	735	0	277	1922	347	0	543	2902	993	0	700	3080	211	0	14310
APPROACH %'s :	25.25%	52.71%	22.04%	0.00%	10.88%	75.49%	13.63%	0.00%	12.24%	65.39%	22.37%	0.00%	17.54%	77.17%	5.29%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	428	931	368	0	143	1021	177	0	275	1397	505	0	337	1550	115	0	7247
PEAK HR FACTOR :	0.930	0.803	0.920	0.000	0.794	0.935	0.941	0.000	0.859	0.957	0.956	0.000	0.851	0.952	0.846	0.000	0.978
	0.890				0.934				0.975				0.976				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Seal Beach Blvd & Westminster Blvd
City: Long Beach
Control: Signalized

Project ID: 18-05307-102
Date: 5/23/2018

Total

NS/EW Streets:	Seal Beach Blvd				Seal Beach Blvd				Westminster Blvd				Westminster Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	2	3	1	0	2	2.5	0.5	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	6	165	32	0	47	208	74	1	33	134	5	0	57	161	32	0	955
7:15 AM	14	210	30	0	50	250	83	0	33	147	6	0	78	227	53	0	1181
7:30 AM	7	143	27	0	47	274	91	0	39	155	7	1	73	297	42	0	1203
7:45 AM	21	198	42	0	56	286	103	0	63	156	7	0	61	272	45	0	1310
8:00 AM	20	196	47	0	53	219	103	1	49	121	6	0	76	243	38	0	1172
8:15 AM	17	172	37	0	45	260	103	1	53	141	3	0	77	226	43	0	1178
8:30 AM	18	149	37	0	41	163	77	1	38	92	7	1	76	250	49	0	999
8:45 AM	15	147	40	0	34	205	96	4	46	96	7	0	70	228	56	0	1044
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	118	1380	292	0	373	1865	730	8	354	1042	48	2	568	1904	358	0	9042
APPROACH %'s :	6.59%	77.09%	16.31%	0.00%	12.53%	62.67%	24.53%	0.27%	24.48%	72.06%	3.32%	0.14%	20.07%	67.28%	12.65%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	62	747	146	0	206	1029	380	1	184	579	26	1	288	1039	178	0	4866
PEAK HR FACTOR :	0.738	0.889	0.777	0.000	0.920	0.899	0.922	0.250	0.730	0.928	0.929	0.250	0.923	0.875	0.840	0.000	0.929
	0.908				0.908				0.874				0.913				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	2	3	1	0	2	2.5	0.5	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	34	264	36	0	35	176	50	1	95	180	8	0	73	204	86	0	1242
4:15 PM	21	255	54	0	49	164	56	0	137	196	10	0	62	200	55	0	1259
4:30 PM	28	244	56	0	65	215	52	3	113	204	5	1	58	193	69	0	1306
4:45 PM	20	209	43	1	44	174	59	2	98	219	8	0	77	230	72	0	1256
5:00 PM	34	238	57	1	58	208	69	3	128	236	9	0	77	209	71	0	1398
5:15 PM	33	250	63	0	64	172	64	2	98	242	9	1	82	246	73	0	1399
5:30 PM	24	203	57	0	57	180	71	0	119	228	8	0	65	242	53	0	1307
5:45 PM	14	154	52	1	65	184	64	2	84	170	14	0	62	218	50	0	1134
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	208	1817	418	3	437	1473	485	13	872	1675	71	2	556	1742	529	0	10301
APPROACH %'s :	8.50%	74.28%	17.09%	0.12%	18.15%	61.17%	20.14%	0.54%	33.28%	63.93%	2.71%	0.08%	19.67%	61.62%	18.71%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	111	900	220	2	223	734	263	7	443	925	34	1	301	927	269	0	5360
PEAK HR FACTOR :	0.816	0.900	0.873	0.500	0.871	0.882	0.926	0.583	0.865	0.956	0.944	0.250	0.918	0.942	0.921	0.000	0.958
	0.891				0.908				0.940				0.933				

APPENDIX B

INTERSECTION CAPACITY UTILIZATION LEVEL OF SERVICE WORKSHEETS

This page intentionally left blank

Intersection Capacity Utilization Analysis

Intersection Number: 1
North/South Roadway Avalon Boulevard
East/West Roadway: PCH
Scenario: 0

	EXISTING CONDITION						2040 NO BUILD					
			Volume		V/C Ratio				Volume		V/C Ratio	
Move-ment	Lane	Cap.	Wkday. AM	Wkday. PM	Wkday. AM	Wkday. PM	Lane	Cap.	Wkday. AM	Wkday. PM	Wkday. AM	Wkday. PM
NBL	1	1,600	202	228	0.13	0.14	1	1,600	233	240	0.15	0.15
NBT	3	4,800	461	480	0.13 *	0.13 *	3	4,800	533	555	0.15 *	0.15 *
NBR	0	0	160	140	0.00	0.00	0	0	185	162	0.00	0.00
SBL	1	1,600	262	256	0.16 *	0.16 *	1	1,600	303	296	0.19 *	0.18 *
SBT	3	4,800	479	537	0.13	0.14	3	4,800	494	621	0.14	0.16
SBR	0	0	163	145	0.00	0.00	0	0	168	168	0.00	0.00
EBL	1	1,600	142	93	0.09 *	0.06	1	1,600	164	107	0.10 *	0.07
EBT	3	4,800	847	1,144	0.20	0.27 *	3	4,800	979	1,322	0.23	0.31 *
EBR	0	0	105	153	0.00	0.00	0	0	121	173	0.00	0.00
WBL	1	1,600	65	103	0.04	0.06 *	1	1,600	75	104	0.05	0.07 *
WBT	3	4,800	1,168	1,059	0.27 *	0.26	3	4,800	1,350	1,224	0.31 *	0.30
WBR	0	0	131	171	0.00	0.00	0	0	151	198	0.00	0.00
N/S Critical Movements					0.29	0.29					0.34	0.33
E/W Critical Movements					0.36	0.33					0.41	0.38
Right Turn Critical Movement					0.00	0.00					0.00	0.00
Clearance Interval					0.10	0.10					0.10	0.10
ICU					0.75	0.72	ICU				0.85	0.81
Level of Service (LOS)					C	C	Level of Service (LOS)				D	D

	PROPOSED LAND USE ELEMENT						PROPOSED LAND USE ELEMENT w/ MITIGATION					
			Volume		V/C Ratio				Volume		V/C Ratio	
Move-ment	Lane	Cap.	Wkday. AM	Wkday. PM	Wkday. AM	Wkday. PM	Lane	Cap.	Wkday. AM	Wkday. PM	Wkday. AM	Wkday. PM
NBL	1	1,600	233	238	0.15	0.15	1	1,600	233	238	0.15	0.15
NBT	3	4,800	533	555	0.15 *	0.15 *	3	4,800	533	555	0.15 *	0.15 *
NBR	0	0	185	162	0.00	0.00	0	0	185	162	0.00	0.00
SBL	1	1,600	303	296	0.19 *	0.18 *	1	1,600	303	296	0.19 *	0.18 *
SBT	3	4,800	492	621	0.14	0.16	3	4,800	492	621	0.14	0.16
SBR	0	0	163	168	0.00	0.00	0	0	163	168	0.00	0.00
EBL	1	1,600	164	107	0.10 *	0.07	1	1,600	164	107	0.10 *	0.07
EBT	3	4,800	979	1,322	0.23	0.31 *	3	4,800	979	1,322	0.23	0.31 *
EBR	0	0	121	169	0.00	0.00	0	0	121	169	0.00	0.00
WBL	1	1,600	75	105	0.05	0.07 *	1	1,600	75	105	0.05	0.07 *
WBT	3	4,800	1,350	1,224	0.31 *	0.30	3	4,800	1,350	1,224	0.31 *	0.30
WBR	0	0	151	198	0.00	0.00	0	0	151	198	0.00	0.00
N/S Critical Movements					0.34	0.33					0.34	0.33
E/W Critical Movements					0.41	0.38					0.41	0.38
Right Turn Critical Movement					0.00	0.00					0.00	0.00
Clearance Interval					0.10	0.10					0.10	0.10
ICU					0.85	0.81	ICU				0.85	0.81
Level of Service (LOS)					D	D	Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 2
North/South Roadway: Avalon Boulevard
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	47	94	0.03 *	0.06
NBT	2	3,200	257	347	0.09	0.14 *
NBR	0	0	42	86	0.00	0.00
SBL	1	1,600	69	97	0.04	0.06 *
SBT	2	3,200	325	295	0.14 *	0.13
SBR	0	0	119	129	0.00	0.00
EBL	1	1,600	162	151	0.10 *	0.09 *
EBT	2	3,200	442	558	0.15	0.19
EBR	0	0	29	38	0.00	0.00
WBL	1	1,600	112	110	0.07	0.07
WBT	2	3,200	566	617	0.19 *	0.23 *
WBR	0	0	54	105	0.00	0.00
N/S Critical Movements					0.17	0.20
E/W Critical Movements					0.29	0.32
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.56	0.62
Level of Service (LOS)					A	B

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	50	96	0.03 *	0.06
2	3,200	297	349	0.11	0.14 *
0	0	49	99	0.00	0.00
1	1,600	80	112	0.05	0.07 *
2	3,200	329	301	0.14 *	0.14
0	0	122	149	0.00	0.00
1	1,600	163	170	0.10 *	0.11 *
2	3,200	511	645	0.17	0.22
0	0	31	45	0.00	0.00
1	1,600	129	110	0.08	0.07
2	3,200	654	713	0.22 *	0.26 *
0	0	62	121	0.00	0.00
				0.17	0.21
				0.32	0.37
				0.00	0.00
				0.10	0.10
ICU				0.59	0.68
Level of Service (LOS)				A	B

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	49	95	0.03 *	0.06
NBT	2	3,200	297	351	0.11	0.14 *
NBR	0	0	49	99	0.00	0.00
SBL	1	1,600	80	112	0.05	0.07 *
SBT	2	3,200	331	296	0.14 *	0.14
SBR	0	0	121	149	0.00	0.00
EBL	1	1,600	164	166	0.10 *	0.10 *
EBT	2	3,200	511	645	0.17	0.22
EBR	0	0	31	44	0.00	0.00
WBL	1	1,600	129	115	0.08	0.07
WBT	2	3,200	654	713	0.22 *	0.26 *
WBR	0	0	62	121	0.00	0.00
N/S Critical Movements					0.17	0.21
E/W Critical Movements					0.32	0.36
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.59	0.67
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	49	95	0.03 *	0.06
2	3,200	297	351	0.11	0.14 *
0	0	49	99	0.00	0.00
1	1,600	80	112	0.05	0.07 *
2	3,200	331	296	0.14 *	0.14
0	0	121	149	0.00	0.00
1	1,600	164	166	0.10 *	0.10 *
2	3,200	511	645	0.17	0.22
0	0	31	44	0.00	0.00
1	1,600	129	115	0.08	0.07
2	3,200	654	713	0.22 *	0.26 *
0	0	62	121	0.00	0.00
				0.17	0.21
				0.32	0.36
				0.00	0.00
				0.10	0.10
ICU				0.59	0.67
Level of Service (LOS)				A	B

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 3
North/South Roadway: Wilmington Avenue
East/West Roadway: Sepulveda Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	20	29	0.01	0.02 *
NBT	2	3,200	486	379	0.21 *	0.20
NBR	0	0	180	256	0.00	0.00
SBL	1	1,600	113	131	0.07 *	0.08
SBT	2	3,200	407	547	0.19	0.27 *
SBR	0	0	198	306	0.00	0.00
EBL	1	1,600	199	152	0.12 *	0.10 *
EBT	2	3,200	378	642	0.13	0.21
EBR	0	0	47	43	0.00	0.00
WBL	1	1,600	126	107	0.08	0.07
WBT	2	3,200	530	474	0.20 *	0.18 *
WBR	0	0	120	98	0.00	0.00
N/S Critical Movements					0.28	0.29
E/W Critical Movements					0.32	0.28
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.70	0.67
Level of Service (LOS)					B	B

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	23	34	0.01	0.02 *
2	3,200	562	438	0.24 *	0.23
0	0	195	292	0.00	0.00
1	1,600	122	142	0.08 *	0.09
2	3,200	470	632	0.22	0.31 *
0	0	229	354	0.00	0.00
1	1,600	207	176	0.13 *	0.11 *
2	3,200	433	724	0.15	0.24
0	0	49	43	0.00	0.00
1	1,600	153	157	0.10	0.10
2	3,200	613	629	0.24 *	0.24 *
0	0	145	128	0.00	0.00
				0.32	0.33
				0.37	0.35
				0.00	0.00
				0.10	0.10
ICU				0.79	0.78
Level of Service (LOS)				C	C

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	23	34	0.01	0.02 *
NBT	2	3,200	562	438	0.24 *	0.23
NBR	0	0	205	290	0.00	0.00
SBL	1	1,600	129	142	0.08 *	0.09
SBT	2	3,200	470	632	0.22	0.31 *
SBR	0	0	229	354	0.00	0.00
EBL	1	1,600	208	176	0.13 *	0.11 *
EBT	2	3,200	463	693	0.16	0.23
EBR	0	0	50	50	0.00	0.00
WBL	1	1,600	149	162	0.09	0.10
WBT	2	3,200	613	635	0.24 *	0.24 *
WBR	0	0	141	136	0.00	0.00
N/S Critical Movements					0.32	0.33
E/W Critical Movements					0.37	0.35
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.79	0.78
Level of Service (LOS)					C	C

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	23	34	0.01	0.02 *
2	3,200	562	438	0.24 *	0.23
0	0	205	290	0.00	0.00
1	1,600	129	142	0.08 *	0.09
2	3,200	470	632	0.22	0.31 *
0	0	229	354	0.00	0.00
1	1,600	208	176	0.13 *	0.11 *
2	3,200	463	693	0.16	0.23
0	0	50	50	0.00	0.00
1	1,600	149	162	0.09	0.10
2	3,200	613	635	0.24 *	0.24 *
0	0	141	136	0.00	0.00
				0.32	0.33
				0.37	0.35
				0.00	0.00
				0.10	0.10
ICU				0.79	0.78
Level of Service (LOS)				C	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 4
North/South Roadway: Wilmington Avenue
East/West Roadway: 223nd Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	7	5	0.00 *	0.00 *
NBT	2		3,200	604	623	0.19	0.19
NBR	1	0	1,600	137	180	0.00	0.00
SBL	1		1,600	75	95	0.05	0.06
SBT	2		3,200	899	812	0.40 *	0.38 *
SBR	0		0	393	414	0.00	0.00
EBL	1		1,600	363	534	0.23 *	0.33 *
EBT	2		3,200	399	868	0.13	0.28
EBR	0		0	15	19	0.00	0.00
WBL	1		1,600	155	128	0.10	0.08
WBT	1		1,600	466	296	0.29 *	0.19 *
WBR	1	0	1,600	60	164	0.00	0.00
N/S Critical Movements						0.40	0.38
E/W Critical Movements						0.52	0.52
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						1.02	1.00
Level of Service (LOS)						F	E

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	8	6	0.01 *	0.00 *
NBT	2		3,200	643	720	0.20	0.23
NBR	1	0	1,600	158	208	0.00	0.00
SBL	1		1,600	120	120	0.08	0.08
SBT	2		3,200	1,039	938	0.47 *	0.44 *
SBR	0		0	454	478	0.00	0.00
EBL	1		1,600	379	617	0.24 *	0.39 *
EBT	2		3,200	461	1,003	0.15	0.32
EBR	0		0	17	22	0.00	0.00
WBL	1		1,600	179	148	0.11	0.09
WBT	1		1,600	539	342	0.34 *	0.21 *
WBR	1	0	1,600	64	209	0.00	0.00
						0.48	0.44
						0.58	0.60
						0.00	0.00
						0.10	0.10
ICU						1.16	1.14
Level of Service (LOS)						F	F

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	8	6	0.01 *	0.00 *
NBT	2		3,200	630	720	0.20	0.23
NBR	1	0	1,600	158	208	0.00	0.00
SBL	1		1,600	114	114	0.07	0.07
SBT	2		3,200	1,039	938	0.47 *	0.42 *
SBR	0		0	454	414	0.00	0.00
EBL	1		1,600	383	617	0.24 *	0.39 *
EBT	2		3,200	461	1,003	0.15	0.32
EBR	0		0	17	22	0.00	0.00
WBL	1		1,600	179	148	0.11	0.09
WBT	1		1,600	539	342	0.34 *	0.21 *
WBR	1	0	1,600	69	206	0.00	0.00
N/S Critical Movements						0.48	0.42
E/W Critical Movements						0.58	0.60
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						1.16	1.12
Level of Service (LOS)						F	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
	1		1,600	8	6	0.01 *	0.00
	2		3,200	630	720	0.20	0.23 *
	1	0	1,600	158	208	0.00	0.00
	1		1,600	114	114	0.07	0.07 *
	2		3,200	1,039	938	0.32 *	0.29
	1	0	1,600	454	414	0.00	0.00
	2		2,880	383	617	0.13 *	0.21 *
	2		3,200	461	1,003	0.15	0.32
	0		0	17	22	0.00	0.00
	1		1,600	179	148	0.11	0.09
	1		1,600	539	342	0.34 *	0.21 *
	1	0	1,600	69	206	0.00	0.00
						0.33	0.30
						0.47	0.42
						0.00	0.00
						0.10	0.10
ICU						0.90	0.82
Level of Service (LOS)						D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 5
North/South Roadway: Terminal Island Freeway
East/West Roadway: Willow Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	261	416	0.09	*	0.14	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	164	404	0.00		0.00	
SBL	0		0	0	2	0.00		0.00	
SBT	1		1,600	0	0	0.00	*	0.00	*
SBR	0		0	0	1	0.00		0.00	
EBL	1		1,600	0	0	0.00		0.00	
EBT	3		4,800	447	933	0.14	*	0.25	*
EBR	0		0	245	254	0.00		0.00	
WBL	2		2,880	190	188	0.07	*	0.07	*
WBT	2		3,200	639	421	0.20		0.13	
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.09		0.14	
E/W Critical Movements						0.21		0.32	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.40		0.56	
Level of Service (LOS)						A		A	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	326	504	0.11	*	0.18	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	190	467	0.00		0.00	
SBL	0		0	0	2	0.00		0.00	
SBT	1		1,600	0	0	0.00	*	0.00	*
SBR	0		0	0	2	0.00		0.00	
EBL	1		1,600	0	0	0.00		0.00	
EBT	3		4,800	621	1,253	0.19	*	0.32	*
EBR	0		0	283	294	0.00		0.00	
WBL	2		2,880	220	217	0.08	*	0.08	*
WBT	2		3,200	751	649	0.23		0.20	
WBR	0		0	0	0	0.00		0.00	
						0.11		0.18	
						0.27		0.40	
						0.00		0.00	
						0.10		0.10	
ICU						0.48		0.68	
Level of Service (LOS)						A		B	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	320	518	0.11	*	0.18	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	190	467	0.00		0.00	
SBL	0		0	0	2	0.00		0.00	
SBT	1		1,600	0	0	0.00	*	0.00	*
SBR	0		0	0	2	0.00		0.00	
EBL	1		1,600	0	0	0.00		0.00	
EBT	3		4,800	681	1,190	0.20	*	0.31	*
EBR	0		0	283	294	0.00		0.00	
WBL	2		2,880	220	217	0.08	*	0.08	*
WBT	2		3,200	696	658	0.22		0.21	
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.11		0.18	
E/W Critical Movements						0.28		0.39	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.49		0.67	
Level of Service (LOS)						A		B	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	320	518	0.11	*	0.18	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	190	467	0.00		0.00	
SBL	0		0	0	2	0.00		0.00	
SBT	1		1,600	0	0	0.00	*	0.00	*
SBR	0		0	0	2	0.00		0.00	
EBL	1		1,600	0	0	0.00		0.00	
EBT	3		4,800	681	1,190	0.20	*	0.31	*
EBR	0		0	283	294	0.00		0.00	
WBL	2		2,880	220	217	0.08	*	0.08	*
WBT	2		3,200	696	658	0.22		0.21	
WBR	0		0	0	0	0.00		0.00	
						0.11		0.18	
						0.28		0.39	
						0.00		0.00	
						0.10		0.10	
ICU						0.49		0.67	
Level of Service (LOS)						A		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 6
North/South Roadway: Santa Fe Avenue
East/West Roadway: Wardlow Road
Scenario: 0

EXISTING CONDITION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	429	292	0.15	*	0.10	*
NBT	2		3,200	569	497	0.18		0.16	
NBR	1	0	1,600	149	192	0.00		0.00	
SBL	2		2,880	178	458	0.06		0.16	
SBT	2		3,200	407	762	0.13	*	0.24	*
SBR	1	0	1,600	409	773	0.00		0.00	
EBL	1		1,600	104	62	0.07	*	0.04	
EBT	2		3,200	168	564	0.05		0.18	*
EBR	1	0	1,600	197	266	0.00		0.00	
WBL	1		1,600	170	158	0.11		0.10	*
WBT	2		3,200	384	237	0.12	*	0.07	
WBR	1	0	1,600	506	162	0.00		0.00	
N/S Critical Movements						0.28		0.34	
E/W Critical Movements						0.19		0.28	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.57		0.72	
Level of Service (LOS)						A		C	

2040 NO BUILD

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	496	319	0.17	*	0.11	*
NBT	2		3,200	658	574	0.21		0.18	
NBR	1	0	1,600	172	199	0.00		0.00	
SBL	2		2,880	206	529	0.07		0.18	
SBT	2		3,200	430	881	0.13	*	0.28	*
SBR	1	0	1,600	473	893	0.00		0.00	
EBL	1		1,600	120	72	0.08	*	0.04	
EBT	2		3,200	194	652	0.06		0.20	*
EBR	1	0	1,600	202	307	0.00		0.00	
WBL	1		1,600	196	165	0.12		0.10	*
WBT	2		3,200	444	247	0.14	*	0.08	
WBR	1	0	1,600	585	187	0.00		0.00	
						0.30		0.39	
						0.22		0.30	
						0.00		0.00	
						0.10		0.10	
ICU						0.62		0.79	
Level of Service (LOS)						B		C	

PROPOSED LAND USE ELEMENT

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	496	293	0.17	*	0.10	*
NBT	2		3,200	658	574	0.21		0.18	
NBR	1	0	1,600	172	222	0.00		0.00	
SBL	2		2,880	187	529	0.06		0.18	
SBT	2		3,200	449	881	0.14	*	0.28	*
SBR	1	0	1,600	473	893	0.00		0.00	
EBL	1		1,600	120	72	0.08	*	0.04	
EBT	2		3,200	194	652	0.06		0.20	*
EBR	1	0	1,600	200	307	0.00		0.00	
WBL	1		1,600	196	158	0.12		0.10	*
WBT	2		3,200	444	251	0.14	*	0.08	
WBR	1	0	1,600	585	168	0.00		0.00	
N/S Critical Movements						0.31		0.38	
E/W Critical Movements						0.22		0.30	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.63		0.78	
Level of Service (LOS)						B		C	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	496	293	0.17	*	0.10	*
NBT	2		3,200	658	574	0.21		0.18	
NBR	1	0	1,600	172	222	0.00		0.00	
SBL	2		2,880	187	529	0.06		0.18	
SBT	2		3,200	449	881	0.14	*	0.28	*
SBR	1	0	1,600	473	893	0.00		0.00	
EBL	1		1,600	120	72	0.08	*	0.04	
EBT	2		3,200	194	652	0.06		0.20	*
EBR	1	0	1,600	200	307	0.00		0.00	
WBL	1		1,600	196	158	0.12		0.10	*
WBT	2		3,200	444	251	0.14	*	0.08	
WBR	1	0	1,600	585	168	0.00		0.00	
						0.31		0.38	
						0.22		0.30	
						0.00		0.00	
						0.10		0.10	
ICU						0.63		0.78	
Level of Service (LOS)						B		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 7
North/South Roadway: Santa Fe Avenue
East/West Roadway: Willow Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	103	72	0.06	0.05
NBT	2	3,200	532	513	0.23 *	0.24 *
NBR	0	0	203	253	0.00	0.00
SBL	2	2,880	269	343	0.09 *	0.12 *
SBT	2	3,200	509	408	0.21	0.16
SBR	0	0	149	113	0.00	0.00
EBL	1	1,600	122	166	0.08 *	0.10
EBT	2	3,200	600	1,147	0.20	0.37 *
EBR	0	0	49	33	0.00	0.00
WBL	2	2,880	268	178	0.09	0.06 *
WBT	2	3,200	743	522	0.30 *	0.23
WBR	0	0	206	222	0.00	0.00
N/S Critical Movements					0.32	0.36
E/W Critical Movements					0.38	0.43
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.80	0.89
Level of Service (LOS)					C	D

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	119	95	0.07	0.06
2	3,200	615	593	0.26 *	0.28 *
0	0	203	292	0.00	0.00
2	2,880	311	396	0.11 *	0.14 *
2	3,200	516	423	0.22	0.17
0	0	172	121	0.00	0.00
1	1,600	133	180	0.08 *	0.11
2	3,200	712	1,257	0.24	0.41 *
0	0	59	48	0.00	0.00
2	2,880	296	196	0.10	0.07 *
2	3,200	747	592	0.30 *	0.27
0	0	206	257	0.00	0.00
				0.37	0.42
				0.38	0.48
				0.00	0.00
				0.10	0.10
ICU				0.85	1.00
Level of Service (LOS)				D	E

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	119	99	0.07	0.06
NBT	2	3,200	615	593	0.27 *	0.27 *
NBR	0	0	235	257	0.00	0.00
SBL	2	2,880	311	396	0.11 *	0.14 *
SBT	2	3,200	526	472	0.22	0.18
SBR	0	0	172	120	0.00	0.00
EBL	1	1,600	138	168	0.09 *	0.11
EBT	2	3,200	771	1,231	0.26	0.40 *
EBR	0	0	65	44	0.00	0.00
WBL	2	2,880	304	192	0.11	0.07 *
WBT	2	3,200	859	611	0.34 *	0.27
WBR	0	0	238	257	0.00	0.00
N/S Critical Movements					0.38	0.41
E/W Critical Movements					0.43	0.47
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.91	0.98
Level of Service (LOS)					E	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	119	99	0.07	0.06
2	3,200	615	593	0.27 *	0.27 *
0	0	235	257	0.00	0.00
2	2,880	311	396	0.11 *	0.14 *
2	3,200	526	472	0.22	0.18
0	0	172	120	0.00	0.00
1	1,600	138	168	0.09 *	0.11
3	4,800	771	1,231	0.17	0.27 *
0	0	65	44	0.00	0.00
2	2,880	304	192	0.11	0.07 *
3	4,800	859	611	0.23 *	0.18
0	0	238	257	0.00	0.00
				0.38	0.41
				0.32	0.34
				0.00	0.00
				0.10	0.10
ICU				0.80	0.85
Level of Service (LOS)				C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 8
North/South Roadway: Santa Fe Ave
East/West Roadway: Pacific Coast Hwy
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	157	119	0.10	0.07
NBT	2	3,200	369	615	0.13 *	0.26 *
NBR	0	0	45	203	0.00	0.00
SBL	1	1,600	222	311	0.14 *	0.19 *
SBT	2	3,200	355	516	0.16	0.22
SBR	0	0	152	172	0.00	0.00
EBL	1	1,600	71	133	0.04 *	0.08
EBT	2	3,200	737	712	0.26	0.24 *
EBR	0	0	87	59	0.00	0.00
WBL	1	1,600	45	296	0.03	0.19 *
WBT	2	3,200	1,014	747	0.35 *	0.30
WBR	0	0	96	206	0.00	0.00
N/S Critical Movements					0.27	0.45
E/W Critical Movements					0.39	0.43
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.76	0.98
Level of Service (LOS)					C	E

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	181	230	0.11	0.14
2	3,200	426	702	0.15 *	0.26 *
0	0	52	128	0.00	0.00
1	1,600	238	180	0.15 *	0.11 *
2	3,200	387	243	0.17	0.11
0	0	156	117	0.00	0.00
1	1,600	93	109	0.06 *	0.07
2	3,200	791	1,110	0.28	0.36 *
0	0	95	43	0.00	0.00
1	1,600	46	60	0.03	0.04 *
2	3,200	1,172	868	0.40 *	0.30
0	0	118	79	0.00	0.00
				0.30	0.37
				0.46	0.40
				0.00	0.00
				0.10	0.10
ICU				0.86	0.87
Level of Service (LOS)				D	D

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	181	230	0.11	0.14
NBT	2	3,200	426	702	0.15 *	0.25 *
NBR	0	0	52	114	0.00	0.00
SBL	1	1,600	238	191	0.15 *	0.12 *
SBT	2	3,200	402	276	0.18	0.12
SBR	0	0	176	106	0.00	0.00
EBL	1	1,600	94	109	0.06 *	0.07
EBT	2	3,200	833	1,110	0.29	0.36 *
EBR	0	0	104	43	0.00	0.00
WBL	1	1,600	49	63	0.03	0.04 *
WBT	2	3,200	1,172	868	0.40 *	0.29
WBR	0	0	116	74	0.00	0.00
N/S Critical Movements					0.30	0.37
E/W Critical Movements					0.46	0.40
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.86	0.87
Level of Service (LOS)					D	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	181	230	0.11	0.14
2	3,200	426	702	0.15 *	0.25 *
0	0	52	114	0.00	0.00
1	1,600	238	191	0.15 *	0.12 *
2	3,200	402	276	0.18	0.12
0	0	176	106	0.00	0.00
1	1,600	94	109	0.06 *	0.07
2	3,200	833	1,110	0.29	0.36 *
0	0	104	43	0.00	0.00
1	1,600	49	63	0.03	0.04 *
2	3,200	1,172	868	0.40 *	0.29
0	0	116	74	0.00	0.00
				0.30	0.37
				0.46	0.40
				0.00	0.00
				0.10	0.10
ICU				0.86	0.87
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 9
North/South Roadway: Santa Fe Avenue
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	21	31	0.01		0.02	
NBT	2		3,200	241	298	0.08	*	0.09	*
NBR	1	0	1,600	18	56	0.00		0.00	
SBL	1		1,600	148	190	0.09	*	0.12	*
SBT	2		3,200	142	195	0.04		0.06	
SBR	1	0	1,600	108	115	0.00		0.00	
EBL	1		1,600	66	124	0.04	*	0.08	*
EBT	3		4,800	614	1,017	0.13		0.22	
EBR	0		0	7	20	0.00		0.00	
WBL	1		1,600	8	15	0.01		0.01	
WBT	3		4,800	804	745	0.17	*	0.16	*
WBR	1	0	1,600	283	180	0.00		0.00	
N/S Critical Movements						0.17		0.21	
E/W Critical Movements						0.21		0.24	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.48		0.55	
Level of Service (LOS)						A		A	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	24	36	0.02		0.02	
2		3,200	279	344	0.09	*	0.11	*
1	0	1,600	21	65	0.00		0.00	
1		1,600	200	213	0.13	*	0.13	*
2		3,200	164	225	0.05		0.07	
1	0	1,600	149	181	0.00		0.00	
1		1,600	85	182	0.05	*	0.11	*
3		4,800	660	1,175	0.14		0.25	
0		0	8	23	0.00		0.00	
1		1,600	9	17	0.01		0.01	
3		4,800	806	775	0.17	*	0.16	*
1	0	1,600	335	199	0.00		0.00	
					0.22		0.24	
					0.22		0.27	
					0.00		0.00	
					0.10		0.10	
ICU					0.54		0.61	
Level of Service (LOS)					A		B	

PROPOSED LAND USE ELEMENT

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	24	36	0.02		0.02	
NBT	2		3,200	279	344	0.09	*	0.11	*
NBR	1	0	1,600	21	65	0.00		0.00	
SBL	1		1,600	209	234	0.13	*	0.15	*
SBT	2		3,200	164	225	0.05		0.07	
SBR	1	0	1,600	164	189	0.00		0.00	
EBL	1		1,600	84	175	0.05	*	0.11	*
EBT	3		4,800	683	1,175	0.14		0.25	
EBR	0		0	8	23	0.00		0.00	
WBL	1		1,600	9	17	0.01		0.01	
WBT	3		4,800	929	787	0.19	*	0.16	*
WBR	1	0	1,600	287	215	0.00		0.00	
N/S Critical Movements						0.22		0.26	
E/W Critical Movements						0.24		0.27	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.56		0.63	
Level of Service (LOS)						A		B	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	24	36	0.02		0.02	
2		3,200	279	344	0.09	*	0.11	*
1	0	1,600	21	65	0.00		0.00	
1		1,600	209	234	0.13	*	0.15	*
2		3,200	164	225	0.05		0.07	
1	0	1,600	164	189	0.00		0.00	
1		1,600	84	175	0.05	*	0.11	*
3		4,800	683	1,175	0.14		0.25	
0		0	8	23	0.00		0.00	
1		1,600	9	17	0.01		0.01	
3		4,800	929	787	0.19	*	0.16	*
1	0	1,600	287	215	0.00		0.00	
					0.22		0.26	
					0.24		0.27	
					0.00		0.00	
					0.10		0.10	
ICU					0.56		0.63	
Level of Service (LOS)					A		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 10
North/South Roadway: I-710
East/West Roadway: SR-1 Cloverleaf WB
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	148	155	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	84	52	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00
EBT	3		4,800	989	1,589	0.29	0.45 *
EBR	0		0	409	560	0.00	0.00
WBL	0		0	0	0	0.00	0.00 *
WBT	2		3,200	1,099	727	0.51 *	0.32
WBR	0		0	522	301	0.00	0.00
N/S Critical Movements						0.00	0.00
E/W Critical Movements						0.51	0.45
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.61	0.55
Level of Service (LOS)						B	A

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	171	155	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	86	60	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00
EBT	3		4,800	1,143	1,837	0.33	0.53 *
EBR	0		0	455	715	0.00	0.00
WBL	0		0	0	0	0.00	0.00 *
WBT	2		3,200	1,270	840	0.56 *	0.38
WBR	0		0	536	367	0.00	0.00
						0.00	0.00
						0.56	0.53
						0.00	0.00
						0.10	0.10
ICU						0.66	0.63
Level of Service (LOS)						B	B

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	171	155	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	87	60	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00
EBT	3		4,800	1,029	1,837	0.31	0.53 *
EBR	0		0	436	711	0.00	0.00
WBL	0		0	0	0	0.00	0.00 *
WBT	2		3,200	1,270	737	0.59 *	0.34
WBR	0		0	603	363	0.00	0.00
N/S Critical Movements						0.00	0.00
E/W Critical Movements						0.59	0.53
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.69	0.63
Level of Service (LOS)						B	B

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	171	155	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	87	60	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00
EBT	3		4,800	1,029	1,837	0.31	0.53 *
EBR	0		0	436	711	0.00	0.00
WBL	0		0	0	0	0.00	0.00 *
WBT	2		3,200	1,270	737	0.59 *	0.34
WBR	0		0	603	363	0.00	0.00
						0.00	0.00
						0.59	0.53
						0.00	0.00
						0.10	0.10
ICU						0.69	0.63
Level of Service (LOS)						B	B

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 11
North/South Roadway: I-710
East/West Roadway: SR-1 Cloverleaf EB
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	326	413	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	441	431	0.00	0.00
EBL	0		0	0	0	0.00	0.00
EBT	2		3,200	1,072	1,736	0.40 *	0.60 *
EBR	0		0	198	180	0.00	0.00
WBL	0		0	0	0	0.00 *	0.00 *
WBT	2		3,200	1,053	712	0.37	0.24
WBR	0		0	130	67	0.00	0.00
N/S Critical Movements						0.00	0.00
E/W Critical Movements						0.40	0.60
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.50	0.70
Level of Service (LOS)						A	B

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	327	477	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	528	567	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00
EBT	2		3,200	1,126	2,006	0.41	0.69 *
EBR	0		0	201	208	0.00	0.00
WBL	0		0	0	0	0.00	0.00 *
WBT	2		3,200	1,217	823	0.42 *	0.28
WBR	0		0	130	67	0.00	0.00
						0.00	0.00
						0.42	0.69
						0.00	0.00
						0.10	0.10
ICU						0.52	0.79
Level of Service (LOS)						A	C

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	353	477	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	512	553	0.00	0.00
EBL	0		0	0	0	0.00	0.00
EBT	2		3,200	1,163	2,006	0.43 *	0.69 *
EBR	0		0	211	208	0.00	0.00
WBL	0		0	0	0	0.00 *	0.00 *
WBT	2		3,200	1,217	712	0.42	0.24
WBR	0		0	130	67	0.00	0.00
N/S Critical Movements						0.00	0.00
E/W Critical Movements						0.43	0.69
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.53	0.79
Level of Service (LOS)						A	C

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00 *	0.00 *
NBT	0		0	0	0	0.00	0.00
NBR	1	0	1,600	353	477	0.00	0.00
SBL	0		0	0	0	0.00	0.00
SBT	0		0	0	0	0.00 *	0.00 *
SBR	1	0	1,600	512	553	0.00	0.00
EBL	0		0	0	0	0.00	0.00
EBT	2		3,200	1,163	2,006	0.43 *	0.69 *
EBR	0		0	211	208	0.00	0.00
WBL	0		0	0	0	0.00 *	0.00 *
WBT	2		3,200	1,217	712	0.42	0.24
WBR	0		0	130	67	0.00	0.00
						0.00	0.00
						0.43	0.69
						0.00	0.00
						0.10	0.10
ICU						0.53	0.79
Level of Service (LOS)						A	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 12
North/South Roadway: Magnolia Avenue
East/West Roadway: Ocean Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	20	72	0.01		0.05	
NBT	2		3,200	23	81	0.01	*	0.03	*
NBR	1	0	1,600	21	37	0.00		0.00	
SBL	1		1,600	156	225	0.10	*	0.14	*
SBT	2		3,200	138	92	0.04		0.03	
SBR	1	0	1,600	309	292	0.00		0.00	
EBL	1		1,600	115	151	0.07	*	0.09	*
EBT	3		4,800	504	1,395	0.11		0.30	
EBR	0		0	24	23	0.00		0.00	
WBL	1		1,600	86	51	0.05		0.03	
WBT	3		4,800	1,782	1,129	0.37	*	0.24	*
WBR	1	0	1,600	127	78	0.00		0.00	
N/S Critical Movements						0.11		0.17	
E/W Critical Movements						0.44		0.33	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.65		0.60	
Level of Service (LOS)						B		A	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	23	83	0.01		0.05	
2		3,200	27	94	0.01	*	0.03	*
1	0	1,600	60	43	0.00		0.00	
1		1,600	221	260	0.14	*	0.16	*
2		3,200	159	106	0.05		0.03	
1	0	1,600	357	337	0.00		0.00	
1		1,600	133	175	0.08	*	0.11	*
3		4,800	736	1,525	0.16		0.32	
0		0	28	27	0.00		0.00	
1		1,600	99	61	0.06		0.04	
3		4,800	2,037	1,336	0.42	*	0.28	*
1	0	1,600	147	90	0.00		0.00	
					0.15		0.19	
					0.50		0.39	
					0.00		0.00	
					0.10		0.10	
ICU					0.75		0.68	
Level of Service (LOS)					C		B	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	23	83	0.01		0.05	
NBT	2		3,200	27	94	0.01	*	0.03	*
NBR	1	0	1,600	58	43	0.00		0.00	
SBL	1		1,600	215	260	0.13	*	0.16	*
SBT	2		3,200	159	106	0.05		0.03	
SBR	1	0	1,600	357	337	0.00		0.00	
EBL	1		1,600	133	175	0.08	*	0.11	*
EBT	3		4,800	752	1,512	0.16		0.32	
EBR	0		0	28	27	0.00		0.00	
WBL	1		1,600	99	56	0.06		0.04	
WBT	3		4,800	2,028	1,339	0.42	*	0.28	*
WBR	1	0	1,600	147	90	0.00		0.00	
N/S Critical Movements						0.14		0.19	
E/W Critical Movements						0.50		0.39	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.74		0.68	
Level of Service (LOS)						C		B	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	23	83	0.01		0.05	
2		3,200	27	94	0.01	*	0.03	*
1	0	1,600	58	43	0.00		0.00	
1		1,600	215	260	0.13	*	0.16	*
2		3,200	159	106	0.05		0.03	
1	0	1,600	357	337	0.00		0.00	
1		1,600	133	175	0.08	*	0.11	*
3		4,800	752	1,512	0.16		0.32	
0		0	28	27	0.00		0.00	
1		1,600	99	56	0.06		0.04	
3		4,800	2,028	1,339	0.42	*	0.28	*
1	0	1,600	147	90	0.00		0.00	
					0.14		0.19	
					0.50		0.39	
					0.00		0.00	
					0.10		0.10	
ICU					0.74		0.68	
Level of Service (LOS)					C		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 13
North/South Roadway: Pacific Avenue
East/West Roadway: PCH
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	79	93	0.05 *	0.06
NBT	2	3,200	372	580	0.13	0.22 *
NBR	0	0	59	110	0.00	0.00
SBL	1	1,600	77	98	0.05	0.06 *
SBT	2	3,200	424	394	0.16 *	0.15
SBR	0	0	100	74	0.00	0.00
EBL	1	1,600	89	99	0.06 *	0.06
EBT	3	4,800	769	1,458	0.17	0.32 *
EBR	0	0	55	97	0.00	0.00
WBL	1	1,600	68	78	0.04	0.05 *
WBT	3	4,800	1,185	765	0.27 *	0.18
WBR	0	0	111	102	0.00	0.00
N/S Critical Movements					0.21	0.28
E/W Critical Movements					0.33	0.37
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.64	0.75
Level of Service (LOS)					B	C

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	108	107	0.07 *	0.07
2	3,200	430	670	0.15	0.25 *
0	0	60	127	0.00	0.00
1	1,600	89	113	0.06	0.07 *
2	3,200	425	455	0.17 *	0.17
0	0	104	86	0.00	0.00
1	1,600	103	114	0.06 *	0.07
3	4,800	889	1,685	0.20	0.37 *
0	0	68	112	0.00	0.00
1	1,600	79	79	0.05	0.05 *
3	4,800	1,370	797	0.31 *	0.19
0	0	128	113	0.00	0.00
				0.24	0.32
				0.37	0.42
				0.00	0.00
				0.10	0.10
ICU				0.71	0.84
Level of Service (LOS)				C	D

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	125	107	0.08 *	0.07
NBT	2	3,200	430	585	0.15	0.22 *
NBR	0	0	64	127	0.00	0.00
SBL	1	1,600	89	113	0.06	0.07 *
SBT	2	3,200	490	455	0.19 *	0.17
SBR	0	0	105	86	0.00	0.00
EBL	1	1,600	103	102	0.06 *	0.06
EBT	3	4,800	775	1,685	0.18	0.37 *
EBR	0	0	76	112	0.00	0.00
WBL	1	1,600	79	82	0.05	0.05 *
WBT	3	4,800	1,370	805	0.31 *	0.19
WBR	0	0	128	113	0.00	0.00
N/S Critical Movements					0.27	0.29
E/W Critical Movements					0.37	0.42
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.74	0.81
Level of Service (LOS)					C	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	125	107	0.08 *	0.07
2	3,200	430	585	0.15	0.22 *
0	0	64	127	0.00	0.00
1	1,600	89	113	0.06	0.07 *
2	3,200	490	455	0.19 *	0.17
0	0	105	86	0.00	0.00
1	1,600	103	102	0.06 *	0.06
3	4,800	775	1,685	0.18	0.37 *
0	0	76	112	0.00	0.00
1	1,600	79	82	0.05	0.05 *
3	4,800	1,370	805	0.31 *	0.19
0	0	128	113	0.00	0.00
				0.27	0.29
				0.37	0.42
				0.00	0.00
				0.10	0.10
ICU				0.74	0.81
Level of Service (LOS)				C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 14
North/South Roadway: Pacific Avenue
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	93	75	0.06 *	0.05
NBT	2	3,200	302	480	0.11	0.18 *
NBR	0	0	46	80	0.00	0.00
SBL	1	1,600	88	84	0.06	0.05 *
SBT	2	3,200	335	321	0.12 *	0.12
SBR	0	0	63	55	0.00	0.00
EBL	1	1,600	57	102	0.04 *	0.06
EBT	2	3,200	726	1,185	0.24	0.39 *
EBR	0	0	57	66	0.00	0.00
WBL	1	1,600	71	35	0.04	0.02 *
WBT	2	3,200	947	728	0.33 *	0.26
WBR	0	0	100	99	0.00	0.00
N/S Critical Movements					0.18	0.23
E/W Critical Movements					0.37	0.41
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.65	0.74
Level of Service (LOS)					B	C

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	107	87	0.07 *	0.05
2	3,200	349	555	0.13	0.20 *
0	0	53	92	0.00	0.00
1	1,600	91	97	0.06	0.06 *
2	3,200	387	371	0.14 *	0.13
0	0	69	56	0.00	0.00
1	1,600	60	102	0.04 *	0.06
2	3,200	839	1,370	0.28	0.45 *
0	0	66	76	0.00	0.00
1	1,600	82	40	0.05	0.03 *
2	3,200	1,095	742	0.38 *	0.27
0	0	116	114	0.00	0.00
				0.21	0.26
				0.42	0.48
				0.00	0.00
				0.10	0.10
ICU				0.73	0.84
Level of Service (LOS)				C	D

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	107	87	0.07 *	0.05
NBT	2	3,200	349	555	0.13	0.20 *
NBR	0	0	53	92	0.00	0.00
SBL	1	1,600	89	97	0.06	0.06 *
SBT	2	3,200	387	371	0.14 *	0.13
SBR	0	0	76	58	0.00	0.00
EBL	1	1,600	68	108	0.04 *	0.07
EBT	2	3,200	736	1,370	0.25	0.45 *
EBR	0	0	66	76	0.00	0.00
WBL	1	1,600	82	40	0.05	0.03 *
WBT	2	3,200	1,095	746	0.38 *	0.26
WBR	0	0	116	101	0.00	0.00
N/S Critical Movements					0.21	0.26
E/W Critical Movements					0.42	0.48
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.73	0.84
Level of Service (LOS)					C	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	107	87	0.07 *	0.05
2	3,200	349	555	0.13	0.20 *
0	0	53	92	0.00	0.00
1	1,600	89	97	0.06	0.06 *
2	3,200	387	371	0.14 *	0.13
0	0	76	58	0.00	0.00
1	1,600	68	108	0.04 *	0.07
2	3,200	736	1,370	0.25	0.45 *
0	0	66	76	0.00	0.00
1	1,600	82	40	0.05	0.03 *
2	3,200	1,095	746	0.38 *	0.26
0	0	116	101	0.00	0.00
				0.21	0.26
				0.42	0.48
				0.00	0.00
				0.10	0.10
ICU				0.73	0.84
Level of Service (LOS)				C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 15
North/South Roadway: Pacific Avenue
East/West Roadway: 7th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	45	58	0.03 *	0.04
NBT	2	3,200	173	454	0.05	0.14 *
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00 *
SBT	2	3,200	314	249	0.11 *	0.09
SBR	0	0	52	44	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	96	71	0.06	0.04
WBT	3	4,800	1,156	593	0.26 *	0.14 *
WBR	0	0	69	71	0.00	0.00
N/S Critical Movements					0.14	0.14
E/W Critical Movements					0.26	0.14
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.50	0.38
Level of Service (LOS)					A	A

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	47	65	0.03 *	0.04
2	3,200	174	525	0.05	0.16 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00 *
2	3,200	363	288	0.13 *	0.11
0	0	64	51	0.00	0.00
0	0	0	0	0.00 *	0.00 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
1	1,600	111	75	0.07	0.05
3	4,800	1,336	640	0.29 *	0.15 *
0	0	80	82	0.00	0.00
				0.16	0.16
				0.29	0.15
				0.00	0.00
				0.10	0.10
ICU				0.55	0.41
Level of Service (LOS)				A	A

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	45	64	0.03 *	0.04
NBT	2	3,200	174	525	0.05	0.16 *
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00 *
SBT	2	3,200	363	288	0.13 *	0.11
SBR	0	0	57	51	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	111	79	0.07	0.05
WBT	3	4,800	1,336	629	0.29 *	0.15 *
WBR	0	0	80	82	0.00	0.00
N/S Critical Movements					0.16	0.16
E/W Critical Movements					0.29	0.15
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.55	0.41
Level of Service (LOS)					A	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	45	64	0.03 *	0.04
2	3,200	174	525	0.05	0.16 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00 *
2	3,200	363	288	0.13 *	0.11
0	0	57	51	0.00	0.00
0	0	0	0	0.00 *	0.00 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
1	1,600	111	79	0.07	0.05
3	4,800	1,336	629	0.29 *	0.15 *
0	0	80	82	0.00	0.00
				0.16	0.16
				0.29	0.15
				0.00	0.00
				0.10	0.10
ICU				0.55	0.41
Level of Service (LOS)				A	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 16
North/South Roadway: Pacific Avenue
East/West Roadway: 6th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00
NBT	2	3,200	184	446	0.07	0.18 *
NBR	0	0	46	132	0.00	0.00
SBL	1	1,600	62	76	0.04	0.05 *
SBT	2	3,200	336	248	0.11 *	0.08
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	82	51	0.05	0.03
EBT	3	4,800	662	1,520	0.14 *	0.32 *
EBR	1	0 1,600	38	41	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.11	0.23
E/W Critical Movements					0.14	0.32
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.35	0.65
Level of Service (LOS)					A	B

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00
NBT	2	3,200	191	515	0.08	0.21 *
NBR	0	0	54	153	0.00	0.00
SBL	1	1,600	72	88	0.04	0.05 *
SBT	2	3,200	388	287	0.12 *	0.09
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	95	106	0.06	0.07
EBT	3	4,800	709	1,757	0.15 *	0.37 *
EBR	1	0 1,600	44	58	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
					0.12	0.26
					0.15	0.37
					0.00	0.00
					0.10	0.10
ICU					0.37	0.73
Level of Service (LOS)					A	C

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00
NBT	2	3,200	190	515	0.08	0.21 *
NBR	0	0	57	153	0.00	0.00
SBL	1	1,600	72	88	0.04	0.05 *
SBT	2	3,200	388	287	0.12 *	0.09
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	95	105	0.06	0.07
EBT	3	4,800	740	1,757	0.15 *	0.37 *
EBR	1	0 1,600	44	59	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.12	0.26
E/W Critical Movements					0.15	0.37
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.37	0.73
Level of Service (LOS)					A	C

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00
NBT	2	3,200	190	515	0.08	0.21 *
NBR	0	0	57	153	0.00	0.00
SBL	1	1,600	72	88	0.04	0.05 *
SBT	2	3,200	388	287	0.12 *	0.09
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	95	105	0.06	0.07
EBT	3	4,800	740	1,757	0.15 *	0.37 *
EBR	1	0 1,600	44	59	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
					0.12	0.26
					0.15	0.37
					0.00	0.00
					0.10	0.10
ICU					0.37	0.73
Level of Service (LOS)					A	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 17
North/South Roadway: Pacific Avenue
East/West Roadway: 3rd Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	58	105	0.04 *	0.07
NBT	2	3,200	106	438	0.03	0.14 *
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00 *
SBT	2	3,200	272	181	0.09 *	0.06
SBR	1 0	1,600	89	37	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	60	49	0.04	0.03
WBT	2	3,200	859	360	0.29 *	0.14 *
WBR	0	0	58	81	0.00	0.00
N/S Critical Movements					0.13	0.14
E/W Critical Movements					0.29	0.14
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.52	0.38
Level of Service (LOS)					A	A

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	67	121	0.04 *	0.08
2	3,200	123	506	0.04	0.16 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00 *
2	3,200	314	182	0.10 *	0.06
1 0	1,600	103	43	0.00	0.00
0	0	0	0	0.00 *	0.00 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
1	1,600	69	71	0.04	0.04
2	3,200	993	416	0.33 *	0.16 *
0	0	67	94	0.00	0.00
				0.14	0.16
				0.33	0.16
				0.00	0.00
				0.10	0.10
ICU				0.57	0.42
Level of Service (LOS)				A	A

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	67	121	0.04 *	0.08
NBT	2	3,200	128	506	0.04	0.16 *
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00 *
SBT	2	3,200	314	190	0.10 *	0.06
SBR	1 0	1,600	103	43	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	69	83	0.04	0.05
WBT	2	3,200	993	416	0.33 *	0.16 *
WBR	0	0	67	94	0.00	0.00
N/S Critical Movements					0.14	0.16
E/W Critical Movements					0.33	0.16
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.57	0.42
Level of Service (LOS)					A	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	67	121	0.04 *	0.08
2	3,200	128	506	0.04	0.16 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00 *
2	3,200	314	190	0.10 *	0.06
1 0	1,600	103	43	0.00	0.00
0	0	0	0	0.00 *	0.00 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
1	1,600	69	83	0.04	0.05
2	3,200	993	416	0.33 *	0.16 *
0	0	67	94	0.00	0.00
				0.14	0.16
				0.33	0.16
				0.00	0.00
				0.10	0.10
ICU				0.57	0.42
Level of Service (LOS)				A	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 18
North/South Roadway: Pacific Avenue
East/West Roadway: Broadway
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00	*	0.00	
NBT	2		3,200	149	475	0.05		0.15	*
NBR	1	0	1,600	48	202	0.00		0.00	
SBL	1		1,600	48	55	0.03		0.03	*
SBT	2		3,200	273	166	0.09	*	0.05	
SBR	0		0	0	0	0.00		0.00	
EBL	1		1,600	42	76	0.03		0.05	
EBT	2		3,200	479	794	0.18	*	0.27	*
EBR	0		0	98	71	0.00		0.00	
WBL	0		0	0	0	0.00	*	0.00	*
WBT	0		0	0	0	0.00		0.00	
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.09		0.18	
E/W Critical Movements						0.18		0.27	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.37		0.55	
Level of Service (LOS)						A		A	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00	*	0.00	
NBT	2		3,200	172	549	0.05		0.17	*
NBR	1	0	1,600	55	233	0.00		0.00	
SBL	1		1,600	55	64	0.03		0.04	*
SBT	2		3,200	316	199	0.10	*	0.06	
SBR	0		0	0	0	0.00		0.00	
EBL	1		1,600	49	88	0.03		0.05	
EBT	2		3,200	554	918	0.21	*	0.31	*
EBR	0		0	113	75	0.00		0.00	
WBL	0		0	0	0	0.00	*	0.00	*
WBT	0		0	0	0	0.00		0.00	
WBR	0		0	0	0	0.00		0.00	
						0.10		0.21	
						0.21		0.31	
						0.00		0.00	
						0.10		0.10	
ICU						0.41		0.62	
Level of Service (LOS)						A		B	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00	*	0.00	
NBT	2		3,200	174	549	0.05		0.17	*
NBR	1	0	1,600	55	233	0.00		0.00	
SBL	1		1,600	55	64	0.03		0.04	*
SBT	2		3,200	316	216	0.10	*	0.07	
SBR	0		0	0	0	0.00		0.00	
EBL	1		1,600	49	88	0.03		0.05	
EBT	2		3,200	554	918	0.21	*	0.31	*
EBR	0		0	113	74	0.00		0.00	
WBL	0		0	0	0	0.00	*	0.00	*
WBT	0		0	0	0	0.00		0.00	
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.10		0.21	
E/W Critical Movements						0.21		0.31	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.41		0.62	
Level of Service (LOS)						A		B	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	0	0	0.00	*	0.00	
2		3,200	174	549	0.05		0.17	*
1	0	1,600	55	233	0.00		0.00	
1		1,600	55	64	0.03		0.04	*
2		3,200	316	216	0.10	*	0.07	
0		0	0	0	0.00		0.00	
1		1,600	49	88	0.03		0.05	
2		3,200	554	918	0.21	*	0.31	*
0		0	113	74	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
					0.10		0.21	
					0.21		0.31	
					0.00		0.00	
					0.10		0.10	
ICU					0.41		0.62	
Level of Service (LOS)					A		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 19
North/South Roadway: Pacific Ave
East/West Roadway: Ocean Blvd
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	7	7	0.00		0.00	
NBT	1		1,600	3	9	0.01	*	0.02	*
NBR	0		0	7	23	0.00		0.00	
SBL	2		2,400	128	223	0.05	*	0.09	*
SBT	1		800	3	0	0.00		0.00	
SBR	1	0	1,600	454	355	0.00		0.00	
EBL	1		1,600	302	345	0.19	*	0.22	*
EBT	3		4,800	1,058	3,050	0.22		0.64	
EBR	0		0	3	11	0.00		0.00	
WBL	1		1,600	25	31	0.02		0.02	
WBT	3		4,800	3,637	2,122	0.76	*	0.44	*
WBR	1	0	1,600	308	252	0.00		0.00	
N/S Critical Movements						0.06		0.11	
E/W Critical Movements						0.95		0.66	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.11		0.87	
Level of Service (LOS)						F		D	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	7	7	0.00		0.00	
NBT	1		1,600	3	10	0.01	*	0.03	*
NBR	0		0	8	25	0.00		0.00	
SBL	2		2,400	148	254	0.06	*	0.11	*
SBT	1		800	3	0	0.00		0.00	
SBR	1	0	1,600	525	358	0.00		0.00	
EBL	1		1,600	305	399	0.19	*	0.25	*
EBT	3		4,800	1,285	3,147	0.27		0.66	
EBR	0		0	3	13	0.00		0.00	
WBL	1		1,600	25	32	0.02		0.02	
WBT	3		4,800	3,745	2,172	0.78	*	0.45	*
WBR	1	0	1,600	356	291	0.00		0.00	
						0.07		0.14	
						0.97		0.70	
						0.00		0.00	
						0.10		0.10	
ICU						1.14		0.94	
Level of Service (LOS)						F		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	7	7	0.00		0.00	
NBT	1		1,600	3	10	0.01	*	0.03	*
NBR	0		0	8	25	0.00		0.00	
SBL	2		2,400	148	260	0.06	*	0.11	*
SBT	1		800	3	0	0.00		0.00	
SBR	1	0	1,600	525	368	0.00		0.00	
EBL	1		1,600	305	399	0.19	*	0.25	*
EBT	3		4,800	1,345	3,149	0.28		0.66	
EBR	0		0	3	13	0.00		0.00	
WBL	1		1,600	25	32	0.02		0.02	
WBT	3		4,800	3,746	2,194	0.78	*	0.46	*
WBR	1	0	1,600	356	291	0.00		0.00	
N/S Critical Movements						0.07		0.14	
E/W Critical Movements						0.97		0.71	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.14		0.95	
Level of Service (LOS)						F		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	7	7	0.00		0.00	
1		1,600	3	10	0.01	*	0.03	*
0		0	8	25	0.00		0.00	
2		2,880	148	260	0.05	*	0.09	*
1		800	3	0	0.00		0.00	
1	0	800	525	368	0.00		0.00	
1		1,600	305	399	0.19	*	0.25	
3		4,800	1,345	3,149	0.28		0.66	*
0		0	3	13	0.00		0.00	
1		1,600	25	32	0.02		0.02	*
5		8,000	3,746	2,194	0.51	*	0.31	
0		0	356	291	0.00		0.00	
					0.06		0.12	
					0.70		0.68	
					0.00		0.00	
					0.10		0.10	
ICU					0.86		0.90	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 20
North/South Roadway: Long Beach Boulevard
East/West Roadway: Alondra Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	96	83	0.06	*	0.05	
NBT	2		3,200	403	841	0.14		0.30	*
NBR	0		0	53	132	0.00		0.00	
SBL	1		1,600	138	191	0.09		0.12	*
SBT	2		3,200	629	615	0.23	*	0.21	
SBR	0		0	98	71	0.00		0.00	
EBL	1		1,600	91	161	0.06	*	0.10	
EBT	2		3,200	460	919	0.14		0.29	*
EBR	1	0	1,600	60	105	0.00		0.00	
WBL	1		1,600	122	95	0.08		0.06	*
WBT	2		3,200	757	392	0.24	*	0.12	
WBR	1	0	1,600	148	165	0.00		0.00	
N/S Critical Movements						0.29		0.42	
E/W Critical Movements						0.30		0.35	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.69		0.87	
Level of Service (LOS)						B		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	111	83	0.07	*	0.05	
2		3,200	466	972	0.16		0.35	*
0		0	61	153	0.00		0.00	
1		1,600	159	195	0.10		0.12	*
2		3,200	727	711	0.26	*	0.25	
0		0	113	75	0.00		0.00	
1		1,600	105	186	0.07	*	0.12	
2		3,200	500	1,062	0.16		0.33	*
1	0	1,600	67	121	0.00		0.00	
1		1,600	141	110	0.09		0.07	*
2		3,200	875	415	0.27	*	0.13	
1	0	1,600	171	191	0.00		0.00	
					0.33		0.47	
					0.34		0.40	
					0.00		0.00	
					0.10		0.10	
ICU					0.77		0.97	
Level of Service (LOS)					C		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	111	85	0.07	*	0.05	
NBT	2		3,200	466	972	0.16		0.35	*
NBR	0		0	61	153	0.00		0.00	
SBL	1		1,600	159	192	0.10		0.12	*
SBT	2		3,200	727	711	0.26	*	0.25	
SBR	0		0	113	74	0.00		0.00	
EBL	1		1,600	105	186	0.07	*	0.12	
EBT	2		3,200	508	1,062	0.16		0.33	*
EBR	1	0	1,600	67	121	0.00		0.00	
WBL	1		1,600	141	110	0.09		0.07	*
WBT	2		3,200	875	409	0.27	*	0.13	
WBR	1	0	1,600	171	191	0.00		0.00	
N/S Critical Movements						0.33		0.47	
E/W Critical Movements						0.34		0.40	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.77		0.97	
Level of Service (LOS)						C		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	111	85	0.07	*	0.05	
2		3,200	466	972	0.15		0.30	*
1	0	1,600	61	153	0.00		0.00	
1		1,600	159	192	0.10		0.12	*
2		3,200	727	711	0.26	*	0.25	
0		0	113	74	0.00		0.00	
1		1,600	105	186	0.07	*	0.12	
3		4,800	508	1,062	0.12		0.25	*
0		0	67	121	0.00		0.00	
1		1,600	141	110	0.09		0.07	*
2		3,200	875	409	0.27	*	0.13	
1	0	1,600	171	191	0.00		0.00	
					0.33		0.42	
					0.34		0.32	
					0.00		0.00	
					0.10		0.10	
ICU					0.77		0.84	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 21
North/South Roadway: Long Beach Boulevard
East/West Roadway: Artesia Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	260	154	0.09	*	0.05	
NBT	2		3,200	404	778	0.13		0.24	*
NBR	1	0	1,600	80	193	0.00		0.00	
SBL	1		1,600	157	148	0.10		0.09	*
SBT	2		3,200	704	576	0.25	*	0.20	
SBR	0		0	99	63	0.00		0.00	
EBL	1		1,600	46	272	0.03	*	0.17	
EBT	2		3,200	173	1,066	0.05		0.33	*
EBR	1	0	1,600	108	332	0.00		0.00	
WBL	1		1,600	373	82	0.23		0.05	*
WBT	2		3,200	851	261	0.27	*	0.08	
WBR	1	0	1,600	187	144	0.00		0.00	
N/S Critical Movements						0.34		0.33	
E/W Critical Movements						0.30		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.74		0.81	
Level of Service (LOS)						C		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	300	154	0.10	*	0.05	
2		3,200	467	899	0.15		0.28	*
1	0	1,600	108	223	0.00		0.00	
1		1,600	170	171	0.11		0.11	*
2		3,200	814	666	0.29	*	0.23	
0		0	114	73	0.00		0.00	
1		1,600	53	314	0.03	*	0.20	
2		3,200	213	1,232	0.07		0.39	*
1	0	1,600	120	384	0.00		0.00	
1		1,600	404	86	0.25		0.05	*
2		3,200	984	297	0.31	*	0.09	
1	0	1,600	216	145	0.00		0.00	
					0.39		0.39	
					0.34		0.44	
					0.00		0.00	
					0.10		0.10	
ICU					0.83		0.93	
Level of Service (LOS)					D		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	290	158	0.10	*	0.05	
NBT	2		3,200	467	899	0.15		0.28	*
NBR	1	0	1,600	113	223	0.00		0.00	
SBL	1		1,600	161	171	0.10		0.11	*
SBT	2		3,200	717	666	0.26	*	0.23	
SBR	0		0	114	73	0.00		0.00	
EBL	1		1,600	53	314	0.03	*	0.20	
EBT	2		3,200	203	1,232	0.06		0.39	*
EBR	1	0	1,600	126	332	0.00		0.00	
WBL	1		1,600	396	86	0.25		0.05	*
WBT	2		3,200	984	292	0.31	*	0.09	
WBR	1	0	1,600	216	166	0.00		0.00	
N/S Critical Movements						0.36		0.39	
E/W Critical Movements						0.34		0.44	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.80		0.93	
Level of Service (LOS)						C		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	290	158	0.10	*	0.05	
2		3,200	467	899	0.15		0.28	*
1	0	1,600	113	223	0.00		0.00	
1		1,600	161	171	0.10		0.11	*
2		3,200	717	666	0.26	*	0.23	
0		0	114	73	0.00		0.00	
1		1,600	53	314	0.03	*	0.20	
3		4,800	203	1,232	0.07		0.33	*
0		0	126	332	0.00		0.00	
1		1,600	396	86	0.25		0.05	*
2		3,200	984	292	0.31	*	0.09	
1	0	1,600	216	166	0.00		0.00	
					0.36		0.39	
					0.34		0.38	
					0.00		0.00	
					0.10		0.10	
ICU					0.80		0.87	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 22
North/South Roadway: Long Beach Boulevard
East/West Roadway: Market Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	23	33	0.01		0.02	
NBT	2		3,200	698	717	0.25	*	0.31	*
NBR	0		0	103	269	0.00		0.00	
SBL	1		1,600	171	373	0.11	*	0.23	*
SBT	2		3,200	701	971	0.22		0.31	
SBR	0		0	17	33	0.00		0.00	
EBL	0		0	68	40	0.04		0.03	
EBT	1		1,600	34	73	0.02	*	0.05	*
EBR	1	0	1,600	23	16	0.00		0.00	
WBL	0		0	259	161	0.16	*	0.10	*
WBT	1		1,600	30	29	0.02		0.02	
WBR	1	0	1,600	374	177	0.00		0.00	
N/S Critical Movements						0.36		0.54	
E/W Critical Movements						0.18		0.15	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.64		0.79	
Level of Service (LOS)						B		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	25	33	0.02		0.02	
NBT	2		3,200	807	751	0.29	*	0.33	*
NBR	0		0	108	311	0.00		0.00	
SBL	1		1,600	175	431	0.11	*	0.27	*
SBT	2		3,200	704	1,122	0.23		0.36	
SBR	0		0	18	33	0.00		0.00	
EBL	0		0	79	45	0.05		0.03	
EBT	1		1,600	36	84	0.02	*	0.05	*
EBR	1	0	1,600	24	17	0.00		0.00	
WBL	0		0	266	186	0.17	*	0.12	*
WBT	1		1,600	32	34	0.02		0.02	
WBR	1	0	1,600	432	180	0.00		0.00	
						0.40		0.60	
						0.19		0.17	
						0.00		0.00	
						0.10		0.10	
ICU						0.69		0.87	
Level of Service (LOS)						B		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	24	34	0.02		0.02	
NBT	2		3,200	807	763	0.28	*	0.34	*
NBR	0		0	104	311	0.00		0.00	
SBL	1		1,600	173	431	0.11	*	0.27	*
SBT	2		3,200	720	1,122	0.23		0.36	
SBR	0		0	18	38	0.00		0.00	
EBL	0		0	79	45	0.05		0.03	
EBT	1		1,600	35	84	0.02	*	0.05	*
EBR	1	0	1,600	24	17	0.00		0.00	
WBL	0		0	271	186	0.17	*	0.12	*
WBT	1		1,600	32	34	0.02		0.02	
WBR	1	0	1,600	432	205	0.00		0.00	
N/S Critical Movements						0.39		0.61	
E/W Critical Movements						0.19		0.17	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.68		0.88	
Level of Service (LOS)						B		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	24	34	0.02		0.02	
NBT	2		3,200	807	763	0.28	*	0.34	*
NBR	0		0	104	311	0.00		0.00	
SBL	1		1,600	173	431	0.11	*	0.27	*
SBT	2		3,200	720	1,122	0.23		0.36	
SBR	0		0	18	38	0.00		0.00	
EBL	0		0	79	45	0.05		0.03	
EBT	1		1,600	35	84	0.02	*	0.05	*
EBR	1	0	1,600	24	17	0.00		0.00	
WBL	0		0	271	186	0.17	*	0.12	*
WBT	1		1,600	32	34	0.02		0.02	
WBR	1	0	1,600	432	205	0.00		0.00	
						0.39		0.61	
						0.19		0.17	
						0.00		0.00	
						0.10		0.10	
ICU						0.68		0.88	
Level of Service (LOS)						B		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 23
North/South Roadway: Long Beach Boulevard
East/West Roadway: Del Amo Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	275	210	0.17	*	0.13	
NBT	2		3,200	445	734	0.14		0.23	*
NBR	1	0	1,600	54	103	0.00		0.00	
SBL	1		1,600	111	175	0.07		0.11	*
SBT	2		3,200	658	612	0.21	*	0.19	
SBR	1	0	1,600	225	121	0.00		0.00	
EBL	2		2,880	137	247	0.05	*	0.09	
EBT	3		4,800	648	1,006	0.14		0.21	*
EBR	1	0	1,600	225	329	0.00		0.00	
WBL	2		2,880	135	131	0.05		0.05	*
WBT	3		4,800	1,405	731	0.29	*	0.15	
WBR	1	0	1,600	102	130	0.00		0.00	
N/S Critical Movements						0.38		0.34	
E/W Critical Movements						0.34		0.26	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.82		0.70	
Level of Service (LOS)						D		B	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	318	243	0.20	*	0.15	
NBT	2		3,200	514	848	0.16		0.27	*
NBR	1	0	1,600	62	119	0.00		0.00	
SBL	1		1,600	114	202	0.07		0.13	*
SBT	2		3,200	760	707	0.24	*	0.22	
SBR	1	0	1,600	260	125	0.00		0.00	
EBL	2		2,880	147	285	0.05	*	0.10	
EBT	3		4,800	749	1,163	0.16		0.24	*
EBR	1	0	1,600	260	380	0.00		0.00	
WBL	2		2,880	156	151	0.05		0.05	*
WBT	3		4,800	1,624	845	0.34	*	0.18	
WBR	1	0	1,600	102	131	0.00		0.00	
						0.44		0.40	
						0.39		0.29	
						0.00		0.00	
						0.10		0.10	
ICU						0.93		0.79	
Level of Service (LOS)						E		C	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	318	224	0.20	*	0.14	
NBT	2		3,200	514	763	0.16		0.24	*
NBR	1	0	1,600	62	119	0.00		0.00	
SBL	1		1,600	112	202	0.07		0.13	*
SBT	2		3,200	667	707	0.21	*	0.22	
SBR	1	0	1,600	260	125	0.00		0.00	
EBL	2		2,880	139	285	0.05	*	0.10	
EBT	3		4,800	749	1,163	0.16		0.24	*
EBR	1	0	1,600	260	380	0.00		0.00	
WBL	2		2,880	156	151	0.05		0.05	*
WBT	3		4,800	1,624	845	0.34	*	0.18	
WBR	1	0	1,600	118	150	0.00		0.00	
N/S Critical Movements						0.41		0.37	
E/W Critical Movements						0.39		0.29	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.90		0.76	
Level of Service (LOS)						D		C	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	318	224	0.20	*	0.14	
NBT	2		3,200	514	763	0.16		0.24	*
NBR	1	0	1,600	62	119	0.00		0.00	
SBL	1		1,600	112	202	0.07		0.13	*
SBT	2		3,200	667	707	0.21	*	0.22	
SBR	1	0	1,600	260	125	0.00		0.00	
EBL	2		2,880	139	285	0.05	*	0.10	
EBT	3		4,800	749	1,163	0.16		0.24	*
EBR	1	0	1,600	260	380	0.00		0.00	
WBL	2		2,880	156	151	0.05		0.05	*
WBT	3		4,800	1,624	845	0.34	*	0.18	
WBR	1	0	1,600	118	150	0.00		0.00	
						0.41		0.37	
						0.39		0.29	
						0.00		0.00	
						0.10		0.10	
ICU						0.90		0.76	
Level of Service (LOS)						D		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 24
North/South Roadway: Long Beach Boulevard
East/West Roadway: San Antonio Drive
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	29	21	0.02 *	0.01
NBT	2	3,200	662	922	0.24	0.37 *
NBR	0	0	121	268	0.00	0.00
SBL	1	1,600	72	158	0.05	0.10 *
SBT	2	3,200	845	782	0.28 *	0.26
SBR	0	0	64	49	0.00	0.00
EBL	0	0	66	105	0.04 *	0.07
EBT	2	3,200	69	125	0.05	0.09 *
EBR	0	0	37	44	0.00	0.00
WBL	2	2,400	363	304	0.15	0.13 *
WBT	1	800	126	104	0.16 *	0.13
WBR	1 0	1,600	111	139	0.00	0.00
N/S Critical Movements					0.30	0.47
E/W Critical Movements					0.20	0.22
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.60	0.79
Level of Service (LOS)					A	C

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	34	24	0.02 *	0.02
NBT	2	3,200	765	1,066	0.28	0.43 *
NBR	0	0	140	310	0.00	0.00
SBL	1	1,600	83	183	0.05	0.11 *
SBT	2	3,200	977	904	0.33 *	0.30
SBR	0	0	74	68	0.00	0.00
EBL	0	0	78	134	0.05 *	0.08
EBT	2	3,200	80	144	0.06	0.10 *
EBR	0	0	43	51	0.00	0.00
WBL	2	2,400	420	351	0.17	0.15 *
WBT	1	800	146	120	0.18 *	0.15
WBR	1 0	1,600	128	161	0.00	0.00
					0.35	0.54
					0.23	0.25
					0.00	0.00
					0.10	0.10
ICU					0.68	0.89
Level of Service (LOS)					B	D

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	34	24	0.02 *	0.02
NBT	2	3,200	765	1,066	0.28	0.43 *
NBR	0	0	140	310	0.00	0.00
SBL	1	1,600	83	183	0.05	0.11 *
SBT	2	3,200	977	904	0.33 *	0.30
SBR	0	0	74	69	0.00	0.00
EBL	0	0	78	137	0.05 *	0.09
EBT	2	3,200	80	144	0.06	0.10 *
EBR	0	0	43	51	0.00	0.00
WBL	2	2,400	420	351	0.17	0.15 *
WBT	1	800	146	120	0.18 *	0.15
WBR	1 0	1,600	120	161	0.00	0.00
N/S Critical Movements					0.35	0.54
E/W Critical Movements					0.23	0.25
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.68	0.89
Level of Service (LOS)					B	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	34	24	0.02 *	0.02
NBT	2	3,200	765	1,066	0.28	0.43 *
NBR	0	0	140	310	0.00	0.00
SBL	1	1,600	83	183	0.05	0.11 *
SBT	2	3,200	977	904	0.33 *	0.30
SBR	0	0	74	69	0.00	0.00
EBL	0	0	78	137	0.05 *	0.09
EBT	2	3,200	80	144	0.06	0.10 *
EBR	0	0	43	51	0.00	0.00
WBL	2	2,400	420	351	0.17	0.15 *
WBT	1	800	146	120	0.18 *	0.15
WBR	1 0	1,600	120	161	0.00	0.00
					0.35	0.54
					0.23	0.25
					0.00	0.00
					0.10	0.10
ICU					0.68	0.89
Level of Service (LOS)					B	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 25
North/South Roadway: Long Beach Boulevard
East/West Roadway: Wardlow Road
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	266	303	0.17 *	0.19 *
NBT	3	4,800	794	1,016	0.19	0.25
NBR	0	0	118	168	0.00	0.00
SBL	1	1,600	56	104	0.04	0.07
SBT	2	3,200	730	708	0.23 *	0.22 *
SBR	1 0	1,600	383	350	0.00	0.00
EBL	1	1,600	269	278	0.17 *	0.17 *
EBT	2	3,200	491	904	0.16	0.30
EBR	0	0	32	41	0.00	0.00
WBL	1	1,600	78	84	0.05	0.05
WBT	2	3,200	658	670	0.22 *	0.23 *
WBR	0	0	32	60	0.00	0.00
N/S Critical Movements					0.40	0.41
E/W Critical Movements					0.39	0.40
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.89	0.91
Level of Service (LOS)					D	E

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	307	350	0.19 *	0.22 *
3	4,800	918	1,174	0.22	0.28
0	0	136	168	0.00	0.00
1	1,600	65	107	0.04	0.07
2	3,200	844	818	0.26 *	0.26 *
1 0	1,600	443	405	0.00	0.00
1	1,600	291	321	0.18 *	0.20 *
2	3,200	567	1,045	0.19	0.34
0	0	37	47	0.00	0.00
1	1,600	90	97	0.06	0.06
2	3,200	760	774	0.25 *	0.26 *
0	0	37	69	0.00	0.00
				0.45	0.48
				0.43	0.46
				0.00	0.00
				0.10	0.10
ICU				0.98	1.04
Level of Service (LOS)				E	F

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	307	311	0.19 *	0.19 *
NBT	3	4,800	918	1,174	0.22	0.28
NBR	0	0	136	173	0.00	0.00
SBL	1	1,600	65	120	0.04	0.08
SBT	2	3,200	844	818	0.26 *	0.26 *
SBR	1 0	1,600	443	405	0.00	0.00
EBL	1	1,600	284	321	0.18 *	0.20 *
EBT	2	3,200	567	1,045	0.19	0.34
EBR	0	0	37	47	0.00	0.00
WBL	1	1,600	90	97	0.06	0.06
WBT	2	3,200	760	774	0.25 *	0.26 *
WBR	0	0	32	69	0.00	0.00
N/S Critical Movements					0.45	0.45
E/W Critical Movements					0.43	0.46
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.98	1.01
Level of Service (LOS)					E	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
2	2,880	307	311	0.11 *	0.11 *
3	4,800	918	1,174	0.22	0.28
0	0	136	173	0.00	0.00
1	1,600	65	120	0.04	0.08
2	3,200	844	818	0.26 *	0.26 *
1 0	1,600	443	405	0.00	0.00
2	2,880	284	321	0.10 *	0.11
2	3,200	567	1,045	0.19	0.34 *
0	0	37	47	0.00	0.00
1	1,600	90	97	0.06	0.06 *
2	3,200	760	774	0.25 *	0.26
0	0	32	69	0.00	0.00
				0.37	0.37
				0.35	0.40
				0.00	0.00
				0.10	0.10
ICU				0.82	0.87
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 26
North/South Roadway: Long Beach Blvd
East/West Roadway: Spring St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	71	52	0.04		0.03	
NBT	2		3,200	1,561	1,945	0.59	*	0.78	*
NBR	0		0	320	557	0.00		0.00	
SBL	1		1,600	250	167	0.16	*	0.10	*
SBT	2		3,200	1,341	1,415	0.50		0.54	
SBR	0		0	246	320	0.00		0.00	
EBL	1		1,600	380	376	0.24		0.24	
EBT	2		3,200	1,157	1,180	0.36	*	0.37	*
EBR	1	0	1,600	87	73	0.00		0.00	
WBL	1		1,600	429	392	0.27	*	0.25	*
WBT	2		3,200	895	1,108	0.28		0.35	
WBR	1	0	1,600	357	398	0.00		0.00	
N/S Critical Movements						0.75		0.88	
E/W Critical Movements						0.63		0.62	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.48		1.60	
Level of Service (LOS)						F		F	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	82	60	0.05		0.04	
2		3,200	1,804	2,248	0.68	*	0.90	*
0		0	370	644	0.00		0.00	
1		1,600	263	188	0.16	*	0.12	*
2		3,200	1,550	1,635	0.57		0.63	
0		0	284	370	0.00		0.00	
1		1,600	439	376	0.27		0.24	
2		3,200	1,205	1,364	0.38	*	0.43	*
1	0	1,600	101	84	0.00		0.00	
1		1,600	438	453	0.27	*	0.28	*
2		3,200	1,034	1,122	0.32		0.35	
1	0	1,600	386	473	0.00		0.00	
					0.84		1.02	
					0.65		0.71	
					0.00		0.00	
					0.10		0.10	
ICU					1.59		1.83	
Level of Service (LOS)					F		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	82	60	0.05		0.04	
NBT	2		3,200	1,804	2,248	0.68	*	0.90	*
NBR	0		0	370	644	0.00		0.00	
SBL	1		1,600	279	198	0.17	*	0.12	*
SBT	2		3,200	1,550	1,635	0.57		0.63	
SBR	0		0	284	370	0.00		0.00	
EBL	1		1,600	439	435	0.27		0.27	
EBT	2		3,200	1,182	1,364	0.37	*	0.43	*
EBR	1	0	1,600	101	84	0.00		0.00	
WBL	1		1,600	496	453	0.31	*	0.28	*
WBT	2		3,200	1,034	1,120	0.32		0.35	
WBR	1	0	1,600	379	502	0.00		0.00	
N/S Critical Movements						0.85		1.02	
E/W Critical Movements						0.68		0.71	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.63		1.83	
Level of Service (LOS)						F		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	82	60	0.05		0.04	
4		6,400	1,804	2,248	0.28	*	0.35	*
1	0	1,600	370	644	0.00		0.00	
2		2,880	279	198	0.10	*	0.07	*
4		6,400	1,550	1,635	0.24		0.26	
1	0	1,600	284	370	0.00		0.00	
2		2,880	439	435	0.15	*	0.15	*
4		6,400	1,182	1,364	0.18		0.21	
1	0	1,600	101	84	0.00		0.00	
2		2,880	496	453	0.17		0.16	
3		4,800	1,034	1,120	0.22	*	0.23	*
1	0	1,600	379	502	0.00		0.00	
					0.38		0.42	
					0.37		0.38	
					0.00		0.00	
					0.10		0.10	
ICU					0.85		0.90	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 27
North/South Roadway: Long Beach Boulevard
East/West Roadway: Williow Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	238	212	0.15	*	0.13	*
NBT	2		3,200	575	524	0.18		0.16	
NBR	1	0	1,600	102	140	0.00		0.00	
SBL	1		1,600	167	234	0.10		0.15	
SBT	2		3,200	527	575	0.16	*	0.18	*
SBR	1	0	1,600	193	185	0.00		0.00	
EBL	1		1,600	233	207	0.15	*	0.13	*
EBT	3		4,800	988	1,250	0.21		0.26	
EBR	1	0	1,600	113	168	0.00		0.00	
WBL	1		1,600	105	182	0.07		0.11	
WBT	3		4,800	924	1,128	0.19	*	0.24	*
WBR	1	0	1,600	94	83	0.00		0.00	
N/S Critical Movements						0.31		0.31	
E/W Critical Movements						0.34		0.37	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.75		0.78	
Level of Service (LOS)						C		C	

2040 NO BUILD

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	275	218	0.17	*	0.14	
NBT	2		3,200	665	606	0.21		0.19	*
NBR	1	0	1,600	104	141	0.00		0.00	
SBL	1		1,600	193	270	0.12		0.17	*
SBT	2		3,200	609	665	0.19	*	0.21	
SBR	1	0	1,600	223	214	0.00		0.00	
EBL	1		1,600	269	239	0.17	*	0.15	
EBT	3		4,800	1,142	1,445	0.24		0.30	*
EBR	1	0	1,600	131	194	0.00		0.00	
WBL	1		1,600	121	186	0.08		0.12	*
WBT	3		4,800	1,068	1,181	0.22	*	0.25	
WBR	1	0	1,600	109	96	0.00		0.00	
						0.36		0.36	
						0.39		0.42	
						0.00		0.00	
						0.10		0.10	
ICU						0.85		0.88	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	275	245	0.17	*	0.15	*
NBT	2		3,200	665	606	0.21		0.19	
NBR	1	0	1,600	118	162	0.00		0.00	
SBL	1		1,600	193	270	0.12		0.17	
SBT	2		3,200	609	665	0.19	*	0.21	*
SBR	1	0	1,600	223	214	0.00		0.00	
EBL	1		1,600	269	239	0.17	*	0.15	
EBT	3		4,800	1,142	1,445	0.24		0.30	*
EBR	1	0	1,600	116	194	0.00		0.00	
WBL	1		1,600	121	210	0.08		0.13	*
WBT	3		4,800	1,068	1,207	0.22	*	0.25	
WBR	1	0	1,600	109	83	0.00		0.00	
N/S Critical Movements						0.36		0.36	
E/W Critical Movements						0.39		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.85		0.89	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	275	245	0.17	*	0.15	*
NBT	2		3,200	665	606	0.21		0.19	
NBR	1	0	1,600	118	162	0.00		0.00	
SBL	1		1,600	193	270	0.12		0.17	
SBT	2		3,200	609	665	0.19	*	0.21	*
SBR	1	0	1,600	223	214	0.00		0.00	
EBL	1		1,600	269	239	0.17	*	0.15	
EBT	3		4,800	1,142	1,445	0.24		0.30	*
EBR	1	0	1,600	116	194	0.00		0.00	
WBL	1		1,600	121	210	0.08		0.13	*
WBT	3		4,800	1,068	1,207	0.22	*	0.25	
WBR	1	0	1,600	109	83	0.00		0.00	
						0.36		0.36	
						0.39		0.43	
						0.00		0.00	
						0.10		0.10	
ICU						0.85		0.89	
Level of Service (LOS)						D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 28
North/South Roadway: Long Beach Boulevard
East/West Roadway: PCH
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	168	124	0.11		0.08	
NBT	2		3,200	556	564	0.17	*	0.18	*
NBR	1	0	1,600	55	86	0.00		0.00	
SBL	1		1,600	180	164	0.11	*	0.10	*
SBT	2		3,200	466	520	0.15		0.16	
SBR	1	0	1,600	113	111	0.00		0.00	
EBL	1		1,600	92	177	0.06	*	0.11	
EBT	3		4,800	769	1,380	0.17		0.31	*
EBR	0		0	62	101	0.00		0.00	
WBL	1		1,600	105	94	0.07		0.06	*
WBT	3		4,800	1,089	767	0.24	*	0.18	
WBR	0		0	80	109	0.00		0.00	
N/S Critical Movements						0.28		0.28	
E/W Critical Movements						0.30		0.37	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.68		0.75	
Level of Service (LOS)						B		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	194	143	0.12		0.09	
NBT	2		3,200	643	652	0.20	*	0.20	*
NBR	1	0	1,600	59	86	0.00		0.00	
SBL	1		1,600	208	190	0.13	*	0.12	*
SBT	2		3,200	539	601	0.17		0.19	
SBR	1	0	1,600	131	128	0.00		0.00	
EBL	1		1,600	106	205	0.07	*	0.13	
EBT	3		4,800	889	1,595	0.20		0.35	*
EBR	0		0	72	106	0.00		0.00	
WBL	1		1,600	121	114	0.08		0.07	*
WBT	3		4,800	1,259	819	0.28	*	0.19	
WBR	0		0	92	116	0.00		0.00	
						0.33		0.32	
						0.35		0.42	
						0.00		0.00	
						0.10		0.10	
ICU						0.78		0.84	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	194	143	0.12		0.09	
NBT	2		3,200	643	652	0.20	*	0.20	*
NBR	1	0	1,600	56	90	0.00		0.00	
SBL	1		1,600	183	190	0.11	*	0.12	*
SBT	2		3,200	539	601	0.17		0.19	
SBR	1	0	1,600	131	128	0.00		0.00	
EBL	1		1,600	106	205	0.07	*	0.13	
EBT	3		4,800	889	1,595	0.20		0.35	*
EBR	0		0	72	104	0.00		0.00	
WBL	1		1,600	121	125	0.08		0.08	*
WBT	3		4,800	1,259	831	0.28	*	0.20	
WBR	0		0	92	120	0.00		0.00	
N/S Critical Movements						0.31		0.32	
E/W Critical Movements						0.35		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.76		0.85	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	194	143	0.12		0.09	
NBT	2		3,200	643	652	0.20	*	0.20	*
NBR	1	0	1,600	56	90	0.00		0.00	
SBL	1		1,600	183	190	0.11	*	0.12	*
SBT	2		3,200	539	601	0.17		0.19	
SBR	1	0	1,600	131	128	0.00		0.00	
EBL	1		1,600	106	205	0.07	*	0.13	
EBT	3		4,800	889	1,595	0.20		0.35	*
EBR	0		0	72	104	0.00		0.00	
WBL	1		1,600	121	125	0.08		0.08	*
WBT	3		4,800	1,259	831	0.28	*	0.20	
WBR	0		0	92	120	0.00		0.00	
						0.31		0.32	
						0.35		0.43	
						0.00		0.00	
						0.10		0.10	
ICU						0.76		0.85	
Level of Service (LOS)						C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 29
North/South Roadway: Long Beach Boulevard
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	123	149	0.08	0.09
NBT	2	3,200	406	510	0.15 *	0.19 *
NBR	0	0	71	96	0.00	0.00
SBL	1	1,600	107	162	0.07 *	0.10 *
SBT	2	3,200	383	463	0.12	0.14
SBR	1 0	1,600	56	68	0.00	0.00
EBL	0	0	0	6	0.00 *	0.00
EBT	3	4,800	800	1,274	0.18	0.29 *
EBR	0	0	62	99	0.00	0.00
WBL	0	0	4	5	0.00	0.00 *
WBT	3	4,800	1,065	751	0.24 *	0.18
WBR	0	0	104	130	0.00	0.00
N/S Critical Movements					0.22	0.29
E/W Critical Movements					0.24	0.29
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.56	0.68
Level of Service (LOS)					A	B

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	142	149	0.09	0.09
2	3,200	469	589	0.17 *	0.22 *
0	0	74	102	0.00	0.00
1	1,600	124	187	0.08 *	0.12 *
2	3,200	443	535	0.14	0.17
1 0	1,600	65	79	0.00	0.00
0	0	0	7	0.00 *	0.00
3	4,800	925	1,472	0.21	0.33 *
0	0	77	114	0.00	0.00
0	0	6	5	0.00	0.00 *
3	4,800	1,231	763	0.28 *	0.19
0	0	120	150	0.00	0.00
				0.25	0.34
				0.28	0.33
				0.00	0.00
				0.10	0.10
ICU				0.63	0.77
Level of Service (LOS)				B	C

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	142	155	0.09	0.10
NBT	2	3,200	469	589	0.17 *	0.22 *
NBR	0	0	80	103	0.00	0.00
SBL	1	1,600	124	187	0.08 *	0.12 *
SBT	2	3,200	443	535	0.14	0.17
SBR	1 0	1,600	65	79	0.00	0.00
EBL	0	0	0	7	0.00 *	0.00
EBT	3	4,800	925	1,472	0.21	0.33 *
EBR	0	0	79	114	0.00	0.00
WBL	0	0	6	5	0.00	0.00 *
WBT	3	4,800	1,231	755	0.28 *	0.19
WBR	0	0	120	150	0.00	0.00
N/S Critical Movements					0.25	0.34
E/W Critical Movements					0.28	0.33
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.63	0.77
Level of Service (LOS)					B	C

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	142	155	0.09	0.10
2	3,200	469	589	0.17 *	0.22 *
0	0	80	103	0.00	0.00
1	1,600	124	187	0.08 *	0.12 *
2	3,200	443	535	0.14	0.17
1 0	1,600	65	79	0.00	0.00
0	0	0	7	0.00 *	0.00
3	4,800	925	1,472	0.21	0.33 *
0	0	79	114	0.00	0.00
0	0	6	5	0.00	0.00 *
3	4,800	1,231	755	0.28 *	0.19
0	0	120	150	0.00	0.00
				0.25	0.34
				0.28	0.33
				0.00	0.00
				0.10	0.10
ICU				0.63	0.77
Level of Service (LOS)				B	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 30
North/South Roadway: Long Beach Blvd
East/West Roadway: 7th St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	330	236	0.21	*	0.15	*
NBT	2		3,200	741	992	0.23		0.31	
NBR	0		0	0	0	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	
SBT	2		3,200	798	842	0.25	*	0.26	*
SBR	1	0	1,600	242	128	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	0		0	0	0	0.00		0.00	
WBL	1		1,600	194	227	0.12		0.14	
WBT	3		4,800	2,837	1,341	0.59	*	0.28	*
WBR	1	0	1,600	147	163	0.00		0.00	
N/S Critical Movements						0.46		0.41	
E/W Critical Movements						0.59		0.28	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.15		0.79	
Level of Service (LOS)						F		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	381	249	0.24	*	0.16	*
2		3,200	856	1,147	0.27		0.36	
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
2		3,200	922	850	0.29	*	0.27	*
1	0	1,600	280	132	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
1		1,600	224	227	0.14		0.14	
3		4,800	3,279	1,366	0.68	*	0.28	*
1	0	1,600	170	188	0.00		0.00	
					0.53		0.43	
					0.68		0.28	
					0.00		0.00	
					0.10		0.10	
ICU					1.31		0.81	
Level of Service (LOS)					F		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	381	259	0.24	*	0.16	*
NBT	2		3,200	856	993	0.27		0.31	
NBR	0		0	0	0	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	
SBT	2		3,200	922	850	0.29	*	0.27	*
SBR	1	0	1,600	280	132	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	0		0	0	0	0.00		0.00	
WBL	1		1,600	194	262	0.12		0.16	
WBT	3		4,800	3,279	1,347	0.68	*	0.28	*
WBR	1	0	1,600	170	188	0.00		0.00	
N/S Critical Movements						0.53		0.43	
E/W Critical Movements						0.68		0.28	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.31		0.81	
Level of Service (LOS)						F		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	381	259	0.13	*	0.09	*
3		4,800	856	993	0.18		0.21	
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
3		4,800	922	850	0.19	*	0.18	*
1	0	1,600	280	132	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
1		1,600	194	262	0.12		0.16	
5		8,000	3,279	1,347	0.43	*	0.19	*
0		0	170	188	0.00		0.00	
					0.32		0.27	
					0.43		0.19	
					0.00		0.00	
					0.10		0.10	
ICU					0.85		0.56	
Level of Service (LOS)					D		A	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 31
North/South Roadway: Long Beach Boulevard
East/West Roadway: 6th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	2		3,200	378	457	0.12	*	0.14	*
NBR	1	0	1,600	30	55	0.00		0.00	
SBL	1		1,600	84	128	0.05	*	0.08	*
SBT	2		3,200	348	375	0.11		0.12	
SBR	0		0	0	0	0.00		0.00	
EBL	1		1,600	77	149	0.05		0.09	
EBT	3		4,800	587	1,517	0.12	*	0.32	*
EBR	1	0	1,600	58	85	0.00		0.00	
WBL	0		0	0	0	0.00	*	0.00	*
WBT	0		0	0	0	0.00		0.00	
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.17		0.22	
E/W Critical Movements						0.12		0.32	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.39		0.64	
Level of Service (LOS)						A		B	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	2		3,200	437	472	0.14	*	0.15	*
NBR	1	0	1,600	35	55	0.00		0.00	
SBL	1		1,600	84	220	0.05	*	0.14	*
SBT	2		3,200	402	433	0.13		0.14	
SBR	0		0	0	0	0.00		0.00	
EBL	1		1,600	80	172	0.05		0.11	
EBT	3		4,800	636	1,753	0.13	*	0.37	*
EBR	1	0	1,600	58	98	0.00		0.00	
WBL	0		0	0	0	0.00	*	0.00	*
WBT	0		0	0	0	0.00		0.00	
WBR	0		0	0	0	0.00		0.00	
						0.19		0.29	
						0.13		0.37	
						0.00		0.00	
						0.10		0.10	
ICU						0.42		0.76	
Level of Service (LOS)						A		C	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	2		3,200	437	484	0.14	*	0.15	*
NBR	1	0	1,600	35	57	0.00		0.00	
SBL	1		1,600	97	219	0.06	*	0.14	*
SBT	2		3,200	402	433	0.13		0.14	
SBR	0		0	0	0	0.00		0.00	
EBL	1		1,600	82	172	0.05		0.11	
EBT	3		4,800	659	1,753	0.14	*	0.37	*
EBR	1	0	1,600	66	98	0.00		0.00	
WBL	0		0	0	0	0.00	*	0.00	*
WBT	0		0	0	0	0.00		0.00	
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.20		0.29	
E/W Critical Movements						0.14		0.37	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.44		0.76	
Level of Service (LOS)						A		C	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	0	0	0.00		0.00	
2		3,200	437	484	0.14	*	0.15	*
1	0	1,600	35	57	0.00		0.00	
1		1,600	97	219	0.06	*	0.14	*
2		3,200	402	433	0.13		0.14	
0		0	0	0	0.00		0.00	
1		1,600	82	172	0.05		0.11	
3		4,800	659	1,753	0.14	*	0.37	*
1	0	1,600	66	98	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
					0.20		0.29	
					0.14		0.37	
					0.00		0.00	
					0.10		0.10	
ICU					0.44		0.76	
Level of Service (LOS)					A		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 32
North/South Roadway: Long Beach Boulevard
East/West Roadway: 3rd Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	60	99	0.04 *	0.06 *
NBT	2	3,200	212	312	0.07	0.10
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	2	3,200	294	334	0.09 *	0.10 *
SBR	1 0	1,600	87	71	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	47	46	0.03	0.03
WBT	2	3,200	860	360	0.29 *	0.14 *
WBR	0	0	60	89	0.00	0.00
N/S Critical Movements					0.13	0.16
E/W Critical Movements					0.29	0.14
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.52	0.40
Level of Service (LOS)					A	A

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	63	101	0.04 *	0.06 *
2	3,200	245	316	0.08	0.10
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
2	3,200	312	386	0.10 *	0.12 *
1 0	1,600	101	82	0.00	0.00
0	0	0	0	0.00 *	0.00 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
1	1,600	132	53	0.08	0.03
2	3,200	994	416	0.33 *	0.16 *
0	0	69	103	0.00	0.00
				0.14	0.18
				0.33	0.16
				0.00	0.00
				0.10	0.10
ICU				0.57	0.44
Level of Service (LOS)				A	A

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	62	105	0.04 *	0.07 *
NBT	2	3,200	215	361	0.07	0.11
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	2	3,200	304	386	0.10 *	0.12 *
SBR	1 0	1,600	101	82	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	116	53	0.07	0.03
WBT	2	3,200	994	416	0.33 *	0.16 *
WBR	0	0	69	103	0.00	0.00
N/S Critical Movements					0.14	0.19
E/W Critical Movements					0.33	0.16
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.57	0.45
Level of Service (LOS)					A	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	62	105	0.04 *	0.07 *
2	3,200	215	361	0.07	0.11
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
2	3,200	304	386	0.10 *	0.12 *
1 0	1,600	101	82	0.00	0.00
0	0	0	0	0.00 *	0.00 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00
1	1,600	116	53	0.07	0.03
2	3,200	994	416	0.33 *	0.16 *
0	0	69	103	0.00	0.00
				0.14	0.19
				0.33	0.16
				0.00	0.00
				0.10	0.10
ICU				0.57	0.45
Level of Service (LOS)				A	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 33
North/South Roadway: Long Beach Blvd
East/West Roadway: Broadway
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	2	3,200	195	270	0.07	0.10
NBR	0	0	17	43	0.00	0.00
SBL	2	2,880	58	100	0.02	0.03
SBT	1	1,600	275	239	0.17 *	0.15 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	67	120	0.04	0.08
EBT	2	3,200	305	1,089	0.14 *	0.36 *
EBR	0	0	134	64	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.17	0.15
E/W Critical Movements					0.14	0.36
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.41	0.61
Level of Service (LOS)					A	B

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	2	3,200	204	284	0.07	0.10
NBR	0	0	17	50	0.00	0.00
SBL	2	2,880	61	116	0.02	0.04
SBT	1	1,600	375	276	0.23 *	0.17 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	68	139	0.04	0.09
EBT	2	3,200	353	1,259	0.16 *	0.42 *
EBR	0	0	171	84	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
					0.23	0.17
					0.16	0.42
					0.00	0.00
					0.10	0.10
ICU					0.49	0.69
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	2	3,200	204	283	0.07	0.10
NBR	0	0	20	50	0.00	0.00
SBL	2	2,880	67	116	0.02	0.04
SBT	1	1,600	358	276	0.22 *	0.17 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	70	139	0.04	0.09
EBT	2	3,200	353	1,259	0.16 *	0.42 *
EBR	0	0	165	83	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.22	0.17
E/W Critical Movements					0.16	0.42
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.48	0.69
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	2	3,200	204	283	0.07	0.10
NBR	0	0	20	50	0.00	0.00
SBL	2	2,880	67	116	0.02	0.04
SBT	1	1,600	358	276	0.22 *	0.17 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	70	139	0.04	0.09
EBT	2	3,200	353	1,259	0.16 *	0.42 *
EBR	0	0	165	83	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
					0.22	0.17
					0.16	0.42
					0.00	0.00
					0.10	0.10
ICU					0.48	0.69
Level of Service (LOS)					A	B

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 34
North/South Roadway: Long Beach Blvd
East/West Roadway: Ocean Blvd
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	0		0	0	0	0.00	*	0.00	*
NBR	0		0	0	0	0.00		0.00	
SBL	2		2,400	72	171	0.03	*	0.07	*
SBT	0		0	0	0	0.00		0.00	
SBR	2	0	2,400	212	244	0.00		0.00	
EBL	1		1,600	92	182	0.06	*	0.11	
EBT	3		4,800	479	1,653	0.10		0.34	*
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	3		4,800	1,976	994	0.41	*	0.21	
WBR	1	0	1,600	115	109	0.00		0.00	
N/S Critical Movements						0.03		0.07	
E/W Critical Movements						0.47		0.34	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.60		0.51	
Level of Service (LOS)						A		A	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	0		0	0	0	0.00	*	0.00	*
NBR	0		0	0	0	0.00		0.00	
SBL	2		2,400	93	198	0.04	*	0.08	*
SBT	0		0	0	0	0.00		0.00	
SBR	2	0	2,400	318	282	0.00		0.00	
EBL	1		1,600	117	183	0.07	*	0.11	
EBT	3		4,800	710	1,814	0.15		0.38	*
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	3		4,800	2,001	1,054	0.42	*	0.22	
WBR	1	0	1,600	133	126	0.00		0.00	
						0.04		0.08	
						0.49		0.38	
						0.00		0.00	
						0.10		0.10	
ICU						0.63		0.56	
Level of Service (LOS)						B		A	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	0		0	0	0	0.00	*	0.00	*
NBR	0		0	0	0	0.00		0.00	
SBL	2		2,400	91	171	0.04	*	0.07	*
SBT	0		0	0	0	0.00		0.00	
SBR	2	0	2,400	297	282	0.00		0.00	
EBL	1		1,600	116	184	0.07	*	0.12	
EBT	3		4,800	732	1,809	0.15		0.38	*
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	3		4,800	2,021	1,033	0.42	*	0.22	
WBR	1	0	1,600	133	126	0.00		0.00	
N/S Critical Movements						0.04		0.07	
E/W Critical Movements						0.49		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.63		0.55	
Level of Service (LOS)						B		A	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	0	0	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
2		2,400	91	171	0.04	*	0.07	*
0		0	0	0	0.00		0.00	
2	0	2,400	297	282	0.00		0.00	
1		1,600	116	184	0.07	*	0.12	
3		4,800	732	1,809	0.15		0.38	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	*
3		4,800	2,021	1,033	0.42	*	0.22	
1	0	1,600	133	126	0.00		0.00	
					0.04		0.07	
					0.49		0.38	
					0.00		0.00	
					0.10		0.10	
ICU					0.63		0.55	
Level of Service (LOS)					B		A	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 35
North/South Roadway: Atlantic Avenue
East/West Roadway: Alondra Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	176	128	0.11	*	0.08	
NBT	3		4,800	419	601	0.12		0.16	*
NBR	0		0	174	167	0.00		0.00	
SBL	1		1,600	321	229	0.20		0.14	*
SBT	2		3,200	727	615	0.23	*	0.19	
SBR	1	0	1,600	100	112	0.00		0.00	
EBL	1		1,600	128	182	0.08	*	0.11	
EBT	3		4,800	828	985	0.19		0.26	*
EBR	0		0	93	248	0.00		0.00	
WBL	1		1,600	179	160	0.11		0.10	*
WBT	2		3,200	894	697	0.28	*	0.22	
WBR	1	0	1,600	265	373	0.00		0.00	
N/S Critical Movements						0.34		0.30	
E/W Critical Movements						0.36		0.36	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.80		0.76	
Level of Service (LOS)						C		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	203	148	0.13	*	0.09	
3		4,800	484	695	0.14		0.18	*
0		0	201	193	0.00		0.00	
1		1,600	371	265	0.23		0.17	*
2		3,200	840	711	0.26	*	0.22	
1	0	1,600	116	129	0.00		0.00	
1		1,600	148	210	0.09	*	0.13	
3		4,800	957	1,138	0.22		0.30	*
0		0	94	287	0.00		0.00	
1		1,600	207	185	0.13		0.12	*
2		3,200	1,033	729	0.32	*	0.23	
1	0	1,600	306	373	0.00		0.00	
					0.39		0.35	
					0.41		0.42	
					0.00		0.00	
					0.10		0.10	
ICU					0.90		0.87	
Level of Service (LOS)					D		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	203	148	0.13	*	0.09	
NBT	3		4,800	484	695	0.14		0.18	*
NBR	0		0	201	193	0.00		0.00	
SBL	1		1,600	326	265	0.20		0.17	*
SBT	2		3,200	739	711	0.23	*	0.22	
SBR	1	0	1,600	116	129	0.00		0.00	
EBL	1		1,600	148	210	0.09	*	0.13	
EBT	3		4,800	837	1,138	0.19		0.30	*
EBR	0		0	94	287	0.00		0.00	
WBL	1		1,600	207	185	0.13		0.12	*
WBT	2		3,200	1,033	720	0.32	*	0.23	
WBR	1	0	1,600	306	384	0.00		0.00	
N/S Critical Movements						0.36		0.35	
E/W Critical Movements						0.41		0.42	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.87		0.87	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	203	148	0.13	*	0.09	
3		4,800	484	695	0.14		0.18	*
0		0	201	193	0.00		0.00	
1		1,600	326	265	0.20		0.17	*
2		3,200	739	711	0.23	*	0.22	
1	0	1,600	116	129	0.00		0.00	
1		1,600	148	210	0.09	*	0.13	
3		4,800	837	1,138	0.19		0.30	*
0		0	94	287	0.00		0.00	
1		1,600	207	185	0.13		0.12	*
2		3,200	1,033	720	0.32	*	0.23	
1	0	1,600	306	384	0.00		0.00	
					0.36		0.35	
					0.41		0.42	
					0.00		0.00	
					0.10		0.10	
ICU					0.87		0.87	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 36
North/South Roadway: Atlantic Avenue
East/West Roadway: SR-91 WB Ramps
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	402	292	0.14 *	0.10 *
NBT	2	3,200	485	688	0.15	0.22
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	3	4,800	891	1,007	0.28 *	0.24 *
SBR	0	0	450	132	0.00	0.00
EBL	0	0	0	0	0.00	0.00
EBT	0	0	0	0	0.00 *	0.00 *
EBR	0	0	0	0	0.00	0.00
WBL	2	2,880	224	256	0.08 *	0.09 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	227	451	0.00	0.00
N/S Critical Movements					0.42	0.34
E/W Critical Movements					0.08	0.09
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.60	0.53
Level of Service (LOS)					A	A

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	465	337	0.16 *	0.12 *
NBT	2	3,200	561	795	0.18	0.25
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	3	4,800	1,030	1,164	0.32 *	0.27 *
SBR	0	0	520	153	0.00	0.00
EBL	0	0	0	0	0.00	0.00
EBT	0	0	0	0	0.00 *	0.00 *
EBR	0	0	0	0	0.00	0.00
WBL	2	2,880	234	296	0.08 *	0.10 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	262	521	0.00	0.00
					0.48	0.39
					0.08	0.10
					0.00	0.00
					0.10	0.10
ICU					0.66	0.59
Level of Service (LOS)					B	A

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	465	337	0.16 *	0.12 *
NBT	2	3,200	561	795	0.18	0.25
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	3	4,800	898	1,164	0.30 *	0.27 *
SBR	0	0	520	153	0.00	0.00
EBL	0	0	0	0	0.00	0.00
EBT	0	0	0	0	0.00 *	0.00 *
EBR	0	0	0	0	0.00	0.00
WBL	2	2,880	229	296	0.08 *	0.10 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	262	521	0.00	0.00
N/S Critical Movements					0.46	0.39
E/W Critical Movements					0.08	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.64	0.59
Level of Service (LOS)					B	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	465	337	0.16 *	0.12 *
NBT	2	3,200	561	795	0.18	0.25
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	3	4,800	898	1,164	0.30 *	0.27 *
SBR	0	0	520	153	0.00	0.00
EBL	0	0	0	0	0.00	0.00
EBT	0	0	0	0	0.00 *	0.00 *
EBR	0	0	0	0	0.00	0.00
WBL	2	2,880	229	296	0.08 *	0.10 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	262	521	0.00	0.00
					0.46	0.39
					0.08	0.10
					0.00	0.00
					0.10	0.10
ICU					0.64	0.59
Level of Service (LOS)					B	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 37
North/South Roadway: Atlantic Avenue
East/West Roadway: SR-91 EB Ramps
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	2		3,200	841	861	0.26	*	0.27	*
NBR	1	0	1,600	296	320	0.00		0.00	
SBL	2		2,880	275	380	0.10	*	0.13	*
SBT	2		3,200	777	881	0.24		0.28	
SBR	0		0	0	0	0.00		0.00	
EBL	2		2,400	54	185	0.02	*	0.08	*
EBT	0		0	0	0	0.00		0.00	
EBR	2	0	2,400	234	546	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	0		0	0	0	0.00	*	0.00	*
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.36		0.40	
E/W Critical Movements						0.02		0.08	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.48		0.58	
Level of Service (LOS)						A		A	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	2		3,200	972	995	0.30	*	0.31	*
NBR	1	0	1,600	297	353	0.00		0.00	
SBL	2		2,880	318	439	0.11	*	0.15	*
SBT	2		3,200	799	1,018	0.25		0.32	
SBR	0		0	0	0	0.00		0.00	
EBL	2		2,400	62	214	0.03	*	0.09	*
EBT	0		0	0	0	0.00		0.00	
EBR	2	0	2,400	270	631	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	0		0	0	0	0.00	*	0.00	*
WBR	0		0	0	0	0.00		0.00	
						0.41		0.46	
						0.03		0.09	
						0.00		0.00	
						0.10		0.10	
ICU						0.54		0.65	
Level of Service (LOS)						A		B	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	2		3,200	972	995	0.30	*	0.31	*
NBR	1	0	1,600	302	378	0.00		0.00	
SBL	2		2,880	318	439	0.11	*	0.15	*
SBT	2		3,200	827	1,018	0.26		0.32	
SBR	0		0	0	0	0.00		0.00	
EBL	2		2,400	62	214	0.03	*	0.09	*
EBT	0		0	0	0	0.00		0.00	
EBR	2	0	2,400	270	631	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	0		0	0	0	0.00	*	0.00	*
WBR	0		0	0	0	0.00		0.00	
N/S Critical Movements						0.41		0.46	
E/W Critical Movements						0.03		0.09	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.54		0.65	
Level of Service (LOS)						A		B	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	0	0	0.00		0.00	
2		3,200	972	995	0.30	*	0.31	*
1	0	1,600	302	378	0.00		0.00	
2		2,880	318	439	0.11	*	0.15	*
2		3,200	827	1,018	0.26		0.32	
0		0	0	0	0.00		0.00	
2		2,400	62	214	0.03	*	0.09	*
0		0	0	0	0.00		0.00	
2	0	2,400	270	631	0.00		0.00	
0		0	0	0	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
					0.41		0.46	
					0.03		0.09	
					0.00		0.00	
					0.10		0.10	
ICU					0.54		0.65	
Level of Service (LOS)					A		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 38
North/South Roadway: Atlantic Avenue
East/West Roadway: Artesia Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	249	160	0.16	*	0.10	
NBT	2		3,200	689	640	0.22		0.20	*
NBR	1	0	1,600	148	109	0.00		0.00	
SBL	1		1,600	158	300	0.10		0.19	*
SBT	3		4,800	529	923	0.18	*	0.22	
SBR	0		0	348	134	0.00		0.00	
EBL	2		2,880	227	367	0.08	*	0.13	
EBT	2		3,200	440	962	0.14		0.30	*
EBR	1	0	1,600	208	214	0.00		0.00	
WBL	1		1,600	90	117	0.06		0.07	*
WBT	2		3,200	855	379	0.27	*	0.12	
WBR	1	0	1,600	230	235	0.00		0.00	
N/S Critical Movements						0.34		0.39	
E/W Critical Movements						0.35		0.37	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.79		0.86	
Level of Service (LOS)						C		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	288	189	0.18	*	0.12	
2		3,200	796	740	0.25		0.23	*
1	0	1,600	171	126	0.00		0.00	
1		1,600	183	347	0.11		0.22	*
3		4,800	532	1,067	0.19	*	0.26	
0		0	402	171	0.00		0.00	
2		2,880	262	370	0.09	*	0.13	
2		3,200	519	1,112	0.16		0.35	*
1	0	1,600	213	247	0.00		0.00	
1		1,600	91	135	0.06		0.08	*
2		3,200	988	457	0.31	*	0.14	
1	0	1,600	266	272	0.00		0.00	
					0.37		0.45	
					0.40		0.43	
					0.00		0.00	
					0.10		0.10	
ICU					0.87		0.98	
Level of Service (LOS)					D		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	288	196	0.18	*	0.12	
NBT	2		3,200	796	740	0.25		0.23	*
NBR	1	0	1,600	171	126	0.00		0.00	
SBL	1		1,600	186	347	0.12		0.22	*
SBT	3		4,800	556	1,067	0.20	*	0.26	
SBR	0		0	402	174	0.00		0.00	
EBL	2		2,880	262	376	0.09	*	0.13	
EBT	2		3,200	499	1,112	0.16		0.35	*
EBR	1	0	1,600	211	247	0.00		0.00	
WBL	1		1,600	92	135	0.06		0.08	*
WBT	2		3,200	988	439	0.31	*	0.14	
WBR	1	0	1,600	266	272	0.00		0.00	
N/S Critical Movements						0.38		0.45	
E/W Critical Movements						0.40		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.88		0.98	
Level of Service (LOS)						D		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	288	196	0.18	*	0.12	
2		3,200	796	740	0.25		0.23	*
1	0	1,600	171	126	0.00		0.00	
1		1,600	186	347	0.12		0.22	*
3		4,800	556	1,067	0.20	*	0.26	
0		0	402	174	0.00		0.00	
2		2,880	262	376	0.09	*	0.13	
3		4,800	499	1,112	0.10		0.23	*
1	0	1,600	211	247	0.00		0.00	
1		1,600	92	135	0.06		0.08	*
2		3,200	988	439	0.31	*	0.14	
1	0	1,600	266	272	0.00		0.00	
					0.38		0.45	
					0.40		0.31	
					0.00		0.00	
					0.10		0.10	
ICU					0.88		0.86	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 39
North/South Roadway: Atlantic Avenue
East/West Roadway: South Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	41	71	0.03 *	0.04
NBT	2	3,200	427	716	0.16	0.27 *
NBR	0	0	79	160	0.00	0.00
SBL	1	1,600	152	255	0.10	0.16 *
SBT	2	3,200	725	509	0.23 *	0.16
SBR	1 0	1,600	59	80	0.00	0.00
EBL	1	1,600	70	71	0.04	0.04
EBT	2	3,200	201	342	0.08 *	0.12 *
EBR	0	0	48	35	0.00	0.00
WBL	1	1,600	123	112	0.08 *	0.07 *
WBT	2	3,200	251	252	0.11	0.12
WBR	0	0	112	137	0.00	0.00
N/S Critical Movements					0.26	0.43
E/W Critical Movements					0.16	0.19
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.52	0.72
Level of Service (LOS)					A	C

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	77	82	0.05	0.05
NBT	2	3,200	494	828	0.20 *	0.32 *
NBR	0	0	153	185	0.00	0.00
SBL	1	1,600	176	257	0.11 *	0.16 *
SBT	2	3,200	746	588	0.23	0.18
SBR	1 0	1,600	68	92	0.00	0.00
EBL	1	1,600	81	72	0.05 *	0.05
EBT	2	3,200	214	395	0.09	0.14 *
EBR	0	0	59	40	0.00	0.00
WBL	1	1,600	132	129	0.08	0.08 *
WBT	2	3,200	290	256	0.13 *	0.13
WBR	0	0	129	154	0.00	0.00
					0.31	0.48
					0.18	0.22
					0.00	0.00
					0.10	0.10
ICU					0.59	0.80
Level of Service (LOS)					A	C

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	87	82	0.05	0.05
NBT	2	3,200	494	828	0.20 *	0.32 *
NBR	0	0	159	185	0.00	0.00
SBL	1	1,600	176	255	0.11 *	0.16 *
SBT	2	3,200	780	588	0.24	0.18
SBR	1 0	1,600	68	92	0.00	0.00
EBL	1	1,600	81	76	0.05 *	0.05
EBT	2	3,200	232	395	0.09	0.14 *
EBR	0	0	60	40	0.00	0.00
WBL	1	1,600	129	129	0.08	0.08 *
WBT	2	3,200	290	291	0.13 *	0.14
WBR	0	0	129	150	0.00	0.00
N/S Critical Movements					0.31	0.48
E/W Critical Movements					0.18	0.22
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.59	0.80
Level of Service (LOS)					A	C

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	87	82	0.05	0.05
NBT	2	3,200	494	828	0.20 *	0.32 *
NBR	0	0	159	185	0.00	0.00
SBL	1	1,600	176	255	0.11 *	0.16 *
SBT	2	3,200	780	588	0.24	0.18
SBR	1 0	1,600	68	92	0.00	0.00
EBL	1	1,600	81	76	0.05 *	0.05
EBT	2	3,200	232	395	0.09	0.14 *
EBR	0	0	60	40	0.00	0.00
WBL	1	1,600	129	129	0.08	0.08 *
WBT	2	3,200	290	291	0.13 *	0.14
WBR	0	0	129	150	0.00	0.00
					0.31	0.48
					0.18	0.22
					0.00	0.00
					0.10	0.10
ICU					0.59	0.80
Level of Service (LOS)					A	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 40
North/South Roadway: Atlantic Avenue
East/West Roadway: Del Amo Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	167	217	0.10	*	0.14	
NBT	2		3,200	300	783	0.09		0.24	*
NBR	1	0	1,600	71	144	0.00		0.00	
SBL	1		1,600	154	108	0.10		0.07	*
SBT	2		3,200	675	471	0.21	*	0.15	
SBR	1	0	1,600	225	118	0.00		0.00	
EBL	1		1,600	81	165	0.05	*	0.10	
EBT	3		4,800	591	1,504	0.12		0.31	*
EBR	1	0	1,600	148	259	0.00		0.00	
WBL	1		1,600	71	104	0.04		0.07	*
WBT	3		4,800	1,383	683	0.31	*	0.17	
WBR	0		0	92	138	0.00		0.00	
N/S Critical Movements						0.31		0.31	
E/W Critical Movements						0.36		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.77		0.79	
Level of Service (LOS)						C		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	193	231	0.12	*	0.14	
2		3,200	347	905	0.11		0.28	*
1	0	1,600	82	166	0.00		0.00	
1		1,600	178	125	0.11		0.08	*
2		3,200	780	544	0.24	*	0.17	
1	0	1,600	260	118	0.00		0.00	
1		1,600	94	191	0.06	*	0.12	
3		4,800	683	1,738	0.14		0.36	*
1	0	1,600	171	299	0.00		0.00	
1		1,600	82	120	0.05		0.08	*
3		4,800	1,598	789	0.36	*	0.20	
0		0	106	159	0.00		0.00	
					0.36		0.36	
					0.42		0.44	
					0.00		0.00	
					0.10		0.10	
ICU					0.88		0.90	
Level of Service (LOS)					D		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	193	230	0.12	*	0.14	
NBT	2		3,200	347	905	0.11		0.28	*
NBR	1	0	1,600	82	166	0.00		0.00	
SBL	1		1,600	178	125	0.11		0.08	*
SBT	2		3,200	780	544	0.24	*	0.17	
SBR	1	0	1,600	260	136	0.00		0.00	
EBL	1		1,600	94	191	0.06	*	0.12	
EBT	3		4,800	683	1,738	0.14		0.36	*
EBR	1	0	1,600	171	299	0.00		0.00	
WBL	1		1,600	82	120	0.05		0.08	*
WBT	3		4,800	1,598	789	0.36	*	0.20	
WBR	0		0	106	159	0.00		0.00	
N/S Critical Movements						0.36		0.36	
E/W Critical Movements						0.42		0.44	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.88		0.90	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	193	230	0.12	*	0.14	
2		3,200	347	905	0.11		0.28	*
1	0	1,600	82	166	0.00		0.00	
1		1,600	178	125	0.11		0.08	*
2		3,200	780	544	0.24	*	0.17	
1	0	1,600	260	136	0.00		0.00	
1		1,600	94	191	0.06	*	0.12	
3		4,800	683	1,738	0.14		0.36	*
1	0	1,600	171	299	0.00		0.00	
1		1,600	82	120	0.05		0.08	*
3		4,800	1,598	789	0.36	*	0.20	
0		0	106	159	0.00		0.00	
					0.36		0.36	
					0.42		0.44	
					0.00		0.00	
					0.10		0.10	
ICU					0.88		0.90	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 41
North/South Roadway: Atlantic Avenue
East/West Roadway: 33rd Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	22	26	0.01	0.02
NBT	2	3,200	793	1,222	0.28 *	0.47 *
NBR	0	0	113	268	0.00	0.00
SBL	1	1,600	59	79	0.04 *	0.05 *
SBT	2	3,200	874	739	0.28	0.24
SBR	0	0	8	13	0.00	0.00
EBL	0	0	4	10	0.00	0.01 *
EBT	1	1,600	9	9	0.02 *	0.03
EBR	0	0	16	26	0.00	0.00
WBL	0	0	58	118	0.04 *	0.07
WBT	2	3,200	11	16	0.05	0.09 *
WBR	0	0	97	157	0.00	0.00
N/S Critical Movements					0.32	0.52
E/W Critical Movements					0.06	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.48	0.72
Level of Service (LOS)					A	C

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	25	28	0.02	0.02
2	3,200	796	1,412	0.29 *	0.53 *
0	0	131	279	0.00	0.00
1	1,600	68	91	0.04 *	0.06 *
2	3,200	877	854	0.28	0.27
0	0	9	15	0.00	0.00
0	0	4	17	0.00	0.01
1	1,600	9	16	0.02 *	0.06 *
0	0	24	57	0.00	0.00
0	0	78	136	0.05 *	0.09 *
2	3,200	13	16	0.06	0.10
0	0	112	181	0.00	0.00
				0.33	0.59
				0.07	0.15
				0.00	0.00
				0.10	0.10
ICU				0.50	0.84
Level of Service (LOS)				A	D

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	26	29	0.02	0.02
NBT	2	3,200	917	1,230	0.33 *	0.47 *
NBR	0	0	130	283	0.00	0.00
SBL	1	1,600	68	91	0.04 *	0.06 *
SBT	2	3,200	931	854	0.29	0.27
SBR	0	0	9	15	0.00	0.00
EBL	0	0	4	18	0.00	0.01
EBT	1	1,600	12	17	0.03 *	0.06 *
EBR	0	0	34	63	0.00	0.00
WBL	0	0	83	139	0.05 *	0.09 *
WBT	2	3,200	13	16	0.06	0.11
WBR	0	0	112	181	0.00	0.00
N/S Critical Movements					0.37	0.53
E/W Critical Movements					0.08	0.15
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.55	0.78
Level of Service (LOS)					A	C

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	26	29	0.02	0.02
2	3,200	917	1,230	0.33 *	0.47 *
0	0	130	283	0.00	0.00
1	1,600	68	91	0.04 *	0.06 *
2	3,200	931	854	0.29	0.27
0	0	9	15	0.00	0.00
0	0	4	18	0.00	0.01
1	1,600	12	17	0.03 *	0.06 *
0	0	34	63	0.00	0.00
0	0	83	139	0.05 *	0.09 *
2	3,200	13	16	0.06	0.11
0	0	112	181	0.00	0.00
				0.37	0.53
				0.08	0.15
				0.00	0.00
				0.10	0.10
ICU				0.55	0.78
Level of Service (LOS)				A	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 42
North/South Roadway: Atlantic Avenue
East/West Roadway: I-405 EB Ramps
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	3	4,800	690	1,110	0.21	0.28
NBR	0	0	315	230	0.00	0.00
SBL	0	0	1	2	0.00	0.00
SBT	2	3,200	937	893	0.29 *	0.28 *
SBR	1 0	1,600	331	242	0.00	0.00
EBL	1	1,600	167	265	0.10 *	0.17 *
EBT	0	0	0	0	0.00	0.00
EBR	1 0	1,600	341	267	0.00	0.00
WBL	0	0	0	0	0.00	0.00
WBT	0	0	0	0	0.00 *	0.00 *
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.29	0.28
E/W Critical Movements					0.10	0.17
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.49	0.55
Level of Service (LOS)					A	A

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	3	4,800	748	1,158	0.23	0.30
NBR	0	0	364	266	0.00	0.00
SBL	0	0	1	2	0.00	0.00
SBT	2	3,200	986	1,032	0.31 *	0.32 *
SBR	1 0	1,600	331	242	0.00	0.00
EBL	1	1,600	193	306	0.12 *	0.19 *
EBT	0	0	0	0	0.00	0.00
EBR	1 0	1,600	414	294	0.00	0.00
WBL	0	0	0	0	0.00	0.00
WBT	0	0	0	0	0.00 *	0.00 *
WBR	0	0	0	0	0.00	0.00
					0.31	0.32
					0.12	0.19
					0.00	0.00
					0.10	0.10
ICU					0.53	0.61
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	3	4,800	708	1,227	0.22	0.31
NBR	0	0	364	266	0.00	0.00
SBL	0	0	1	2	0.00	0.00
SBT	2	3,200	1,056	1,032	0.33 *	0.32 *
SBR	1 0	1,600	331	242	0.00	0.00
EBL	1	1,600	193	306	0.12 *	0.19 *
EBT	0	0	0	0	0.00	0.00
EBR	1 0	1,600	444	309	0.00	0.00
WBL	0	0	0	0	0.00	0.00
WBT	0	0	0	0	0.00 *	0.00 *
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.33	0.32
E/W Critical Movements					0.12	0.19
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.55	0.61
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00 *
NBT	3	4,800	708	1,227	0.22	0.31
NBR	0	0	364	266	0.00	0.00
SBL	0	0	1	2	0.00	0.00
SBT	2	3,200	1,056	1,032	0.33 *	0.32 *
SBR	1 0	1,600	331	242	0.00	0.00
EBL	1	1,600	193	306	0.12 *	0.19 *
EBT	0	0	0	0	0.00	0.00
EBR	1 0	1,600	444	309	0.00	0.00
WBL	0	0	0	0	0.00	0.00
WBT	0	0	0	0	0.00 *	0.00 *
WBR	0	0	0	0	0.00	0.00
					0.33	0.32
					0.12	0.19
					0.00	0.00
					0.10	0.10
ICU					0.55	0.61
Level of Service (LOS)					A	B

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 43
North/South Roadway: Atlantic Avenue
East/West Roadway: Willow Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	113	80	0.07	0.05
NBT	2	3,200	666	556	0.24 *	0.21 *
NBR	0	0	105	130	0.00	0.00
SBL	1	1,600	97	167	0.06 *	0.10 *
SBT	2	3,200	565	673	0.20	0.25
SBR	0	0	74	142	0.00	0.00
EBL	2	2,880	135	112	0.05 *	0.04
EBT	3	4,800	894	1,369	0.20	0.31 *
EBR	0	0	79	100	0.00	0.00
WBL	1	1,600	105	109	0.07	0.07 *
WBT	3	4,800	959	1,071	0.23 *	0.24
WBR	0	0	166	89	0.00	0.00
N/S Critical Movements					0.30	0.31
E/W Critical Movements					0.28	0.38
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.68	0.79
Level of Service (LOS)					B	C

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	132	82	0.08	0.05
2	3,200	804	653	0.29 *	0.25 *
0	0	116	150	0.00	0.00
1	1,600	121	167	0.08 *	0.10 *
2	3,200	682	728	0.24	0.28
0	0	97	155	0.00	0.00
2	2,880	142	127	0.05 *	0.04
3	4,800	1,033	1,582	0.23	0.35 *
0	0	91	116	0.00	0.00
1	1,600	121	109	0.08	0.07 *
3	4,800	1,108	1,086	0.27 *	0.25
0	0	192	103	0.00	0.00
				0.37	0.35
				0.32	0.42
				0.00	0.00
				0.10	0.10
ICU				0.79	0.87
Level of Service (LOS)				C	D

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	116	92	0.07 *	0.06
NBT	2	3,200	707	675	0.25	0.26 *
NBR	0	0	106	150	0.00	0.00
SBL	1	1,600	124	193	0.08	0.12 *
SBT	2	3,200	740	678	0.26 *	0.26
SBR	0	0	96	152	0.00	0.00
EBL	2	2,880	156	139	0.05 *	0.05
EBT	3	4,800	1,033	1,582	0.23	0.35 *
EBR	0	0	91	116	0.00	0.00
WBL	1	1,600	121	126	0.08	0.08 *
WBT	3	4,800	1,108	1,097	0.27 *	0.25
WBR	0	0	192	119	0.00	0.00
N/S Critical Movements					0.33	0.38
E/W Critical Movements					0.32	0.43
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.75	0.91
Level of Service (LOS)					C	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	116	92	0.07 *	0.06
2	3,200	707	675	0.25	0.26 *
0	0	106	150	0.00	0.00
1	1,600	124	193	0.08	0.12 *
2	3,200	740	678	0.26 *	0.26
0	0	96	152	0.00	0.00
2	2,880	156	139	0.05 *	0.05
3	4,800	1,033	1,582	0.22	0.33 *
1 0	1,600	91	116	0.00	0.00
1	1,600	121	126	0.08	0.08 *
3	4,800	1,108	1,097	0.27 *	0.25
0	0	192	119	0.00	0.00
				0.33	0.38
				0.32	0.41
				0.00	0.00
				0.10	0.10
ICU				0.75	0.89
Level of Service (LOS)				C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 44
North/South Roadway: Atlantic Avenue
East/West Roadway: PCH
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	69	68	0.04	*	0.04	
NBT	2		3,200	572	603	0.18		0.19	*
NBR	1	0	1,600	200	176	0.00		0.00	
SBL	1		1,600	50	93	0.03		0.06	*
SBT	2		3,200	660	543	0.23	*	0.19	
SBR	0		0	72	79	0.00		0.00	
EBL	1		1,600	98	77	0.06	*	0.05	
EBT	3		4,800	689	1,393	0.18		0.31	*
EBR	0		0	192	94	0.00		0.00	
WBL	1		1,600	181	113	0.11		0.07	*
WBT	3		4,800	1,101	791	0.25	*	0.18	
WBR	0		0	109	72	0.00		0.00	
N/S Critical Movements						0.27		0.25	
E/W Critical Movements						0.31		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.68		0.73	
Level of Service (LOS)						B		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	80	130	0.05	*	0.08	*
2		3,200	735	733	0.23		0.23	
1	0	1,600	231	178	0.00		0.00	
1		1,600	58	107	0.04		0.07	
2		3,200	745	644	0.26	*	0.23	*
0		0	83	89	0.00		0.00	
1		1,600	117	80	0.07	*	0.05	
3		4,800	796	1,610	0.21		0.37	*
0		0	207	163	0.00		0.00	
1		1,600	181	116	0.11		0.07	*
3		4,800	1,272	914	0.29	*	0.21	
0		0	121	83	0.00		0.00	
					0.31		0.31	
					0.36		0.44	
					0.00		0.00	
					0.10		0.10	
ICU					0.77		0.85	
Level of Service (LOS)					C		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	80	143	0.05	*	0.09	*
NBT	2		3,200	684	725	0.21		0.23	
NBR	1	0	1,600	231	203	0.00		0.00	
SBL	1		1,600	58	107	0.04		0.07	
SBT	2		3,200	780	626	0.27	*	0.23	*
SBR	0		0	72	100	0.00		0.00	
EBL	1		1,600	113	81	0.07	*	0.05	
EBT	3		4,800	796	1,610	0.21		0.37	*
EBR	0		0	216	157	0.00		0.00	
WBL	1		1,600	209	131	0.13		0.08	*
WBT	3		4,800	1,272	914	0.29	*	0.21	
WBR	0		0	126	83	0.00		0.00	
N/S Critical Movements						0.32		0.32	
E/W Critical Movements						0.36		0.45	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.78		0.87	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	80	143	0.05	*	0.09	*
2		3,200	684	725	0.21		0.23	
1	0	1,600	231	203	0.00		0.00	
1		1,600	58	107	0.04		0.07	
2		3,200	780	626	0.27	*	0.23	*
0		0	72	100	0.00		0.00	
1		1,600	113	81	0.07	*	0.05	
3		4,800	796	1,610	0.21		0.37	*
0		0	216	157	0.00		0.00	
1		1,600	209	131	0.13		0.08	*
3		4,800	1,272	914	0.29	*	0.21	
0		0	126	83	0.00		0.00	
					0.32		0.32	
					0.36		0.45	
					0.00		0.00	
					0.10		0.10	
ICU					0.78		0.87	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 45
North/South Roadway: Atlantic Avenue
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	60	64	0.04 *	0.04
NBT	2	3,200	417	477	0.14	0.18 *
NBR	0	0	45	103	0.00	0.00
SBL	1	1,600	110	97	0.07	0.06 *
SBT	2	3,200	495	542	0.18 *	0.19
SBR	0	0	78	79	0.00	0.00
EBL	1	1,600	124	166	0.08 *	0.10
EBT	2	3,200	636	1,210	0.23	0.41 *
EBR	0	0	87	87	0.00	0.00
WBL	1	1,600	127	101	0.08	0.06 *
WBT	2	3,200	1,052	760	0.36 *	0.26
WBR	0	0	109	83	0.00	0.00
N/S Critical Movements					0.22	0.24
E/W Critical Movements					0.44	0.47
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.76	0.81
Level of Service (LOS)					C	D

2040 NO BUILD

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	78	79	0.05	0.05 *
NBT	2	3,200	579	654	0.20 *	0.24
NBR	0	0	61	121	0.00	0.00
SBL	1	1,600	124	102	0.08 *	0.06
SBT	2	3,200	558	712	0.20	0.25 *
SBR	0	0	85	88	0.00	0.00
EBL	1	1,600	143	181	0.09 *	0.11
EBT	2	3,200	735	1,398	0.26	0.47 *
EBR	0	0	101	101	0.00	0.00
WBL	1	1,600	147	118	0.09	0.07 *
WBT	2	3,200	1,216	878	0.41 *	0.30
WBR	0	0	110	90	0.00	0.00
					0.28	0.30
					0.50	0.54
					0.00	0.00
					0.10	0.10
ICU					0.88	0.94
Level of Service (LOS)					D	E

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	78	79	0.05	0.05 *
NBT	2	3,200	579	654	0.20 *	0.24
NBR	0	0	61	121	0.00	0.00
SBL	1	1,600	124	102	0.08 *	0.06
SBT	2	3,200	558	712	0.20	0.25 *
SBR	0	0	85	88	0.00	0.00
EBL	1	1,600	129	181	0.08 *	0.11
EBT	2	3,200	660	1,255	0.23	0.42 *
EBR	0	0	90	101	0.00	0.00
WBL	1	1,600	132	118	0.08	0.07 *
WBT	2	3,200	1,091	788	0.38 *	0.27
WBR	0	0	110	90	0.00	0.00
N/S Critical Movements					0.28	0.30
E/W Critical Movements					0.46	0.49
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.84	0.89
Level of Service (LOS)					D	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	78	79	0.05	0.05 *
NBT	2	3,200	579	654	0.20 *	0.24
NBR	0	0	61	121	0.00	0.00
SBL	1	1,600	124	102	0.08 *	0.06
SBT	2	3,200	558	712	0.20	0.25 *
SBR	0	0	85	88	0.00	0.00
EBL	1	1,600	129	181	0.08 *	0.11
EBT	2	3,200	660	1,255	0.23	0.42 *
EBR	0	0	90	101	0.00	0.00
WBL	1	1,600	132	118	0.08	0.07 *
WBT	2	3,200	1,091	788	0.38 *	0.27
WBR	0	0	110	90	0.00	0.00
					0.28	0.30
					0.46	0.49
					0.00	0.00
					0.10	0.10
ICU					0.84	0.89
Level of Service (LOS)					D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 46
North/South Roadway: Atlantic Ave
East/West Roadway: 7th St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	117	66	0.07	*	0.04	*
NBT	2		3,200	346	331	0.11		0.10	
NBR	1	0	1,600	132	397	0.00		0.00	
SBL	1		1,600	111	121	0.07		0.08	
SBT	2		3,200	280	375	0.12	*	0.14	*
SBR	0		0	89	85	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	0		0	0	0	0.00		0.00	
WBL	1		1,600	103	99	0.06		0.06	
WBT	2		3,200	1,195	753	0.41	*	0.27	*
WBR	0		0	126	109	0.00		0.00	
N/S Critical Movements						0.19		0.18	
E/W Critical Movements						0.41		0.27	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.70		0.55	
Level of Service (LOS)						B		A	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	123	69	0.08	*	0.04	
2		3,200	413	409	0.13		0.13	*
1	0	1,600	153	459	0.00		0.00	
1		1,600	128	127	0.08		0.08	*
2		3,200	317	431	0.13	*	0.16	
0		0	102	94	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
1		1,600	119	103	0.07		0.06	
2		3,200	1,381	755	0.47	*	0.28	*
0		0	135	130	0.00		0.00	
					0.21		0.21	
					0.47		0.28	
					0.00		0.00	
					0.10		0.10	
ICU					0.78		0.59	
Level of Service (LOS)					C		A	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	128	69	0.08	*	0.04	
NBT	2		3,200	408	403	0.13		0.13	*
NBR	1	0	1,600	153	459	0.00		0.00	
SBL	1		1,600	128	126	0.08		0.08	*
SBT	2		3,200	310	433	0.13	*	0.16	
SBR	0		0	99	93	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	0		0	0	0	0.00		0.00	
WBL	1		1,600	119	100	0.07		0.06	
WBT	2		3,200	1,381	870	0.47	*	0.31	*
WBR	0		0	131	122	0.00		0.00	
N/S Critical Movements						0.21		0.21	
E/W Critical Movements						0.47		0.31	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.78		0.62	
Level of Service (LOS)						C		B	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	128	69	0.08	*	0.04	
2		3,200	408	403	0.13		0.13	*
1	0	1,600	153	459	0.00		0.00	
1		1,600	128	126	0.08		0.08	*
2		3,200	310	433	0.13	*	0.16	
0		0	99	93	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
1		1,600	119	100	0.07		0.06	
2		3,200	1,381	870	0.47	*	0.31	*
0		0	131	122	0.00		0.00	
					0.21		0.21	
					0.47		0.31	
					0.00		0.00	
					0.10		0.10	
ICU					0.78		0.62	
Level of Service (LOS)					C		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 47
North/South Roadway: Atlantic Ave
East/West Roadway: 6th St
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00 *
NBT	2	3,200	353	380	0.12 *	0.12
NBR	0	0	32	15	0.00	0.00
SBL	1	1,600	50	30	0.03 *	0.02
SBT	2	3,200	353	433	0.11	0.14 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	215	590	0.13	0.37 *
EBT	2	3,200	389	845	0.14 *	0.30
EBR	0	0	73	107	0.00	0.00
WBL	1	1,600	18	3	0.01 *	0.00
WBT	0	0	0	0	0.00	0.00 *
WBR	1 0	1,600	31	12	0.00	0.00
N/S Critical Movements					0.15	0.14
E/W Critical Movements					0.15	0.37
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.40	0.61
Level of Service (LOS)					A	B

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00 *
NBT	2	3,200	481	432	0.17 *	0.14
NBR	0	0	57	17	0.00	0.00
SBL	1	1,600	58	35	0.04 *	0.02
SBT	2	3,200	401	518	0.13	0.16 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	248	616	0.16	0.39
EBT	2	3,200	450	977	0.17 *	0.40 *
EBR	0	0	103	300	0.00	0.00
WBL	1	1,600	21	6	0.01 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	36	14	0.00	0.00
					0.21	0.16
					0.18	0.40
					0.00	0.00
					0.10	0.10
ICU					0.49	0.66
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00 *
NBT	2	3,200	480	434	0.17 *	0.14
NBR	0	0	55	15	0.00	0.00
SBL	1	1,600	58	35	0.04 *	0.02
SBT	2	3,200	398	518	0.12	0.16 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	248	609	0.16	0.38
EBT	2	3,200	450	977	0.17 *	0.40 *
EBR	0	0	103	309	0.00	0.00
WBL	1	1,600	21	6	0.01 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	36	14	0.00	0.00
N/S Critical Movements					0.21	0.16
E/W Critical Movements					0.18	0.40
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.49	0.66
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00 *
NBT	2	3,200	480	434	0.17 *	0.14
NBR	0	0	55	15	0.00	0.00
SBL	1	1,600	58	35	0.04 *	0.02
SBT	2	3,200	398	518	0.12	0.16 *
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	248	609	0.16	0.38
EBT	2	3,200	450	977	0.17 *	0.40 *
EBR	0	0	103	309	0.00	0.00
WBL	1	1,600	21	6	0.01 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	36	14	0.00	0.00
					0.21	0.16
					0.18	0.40
					0.00	0.00
					0.10	0.10
ICU					0.49	0.66
Level of Service (LOS)					A	B

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 48
North/South Roadway: Atlantic Ave
East/West Roadway: 3rd St
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	24	30	0.02 *	0.02 *
NBT	2	3,200	138	230	0.05	0.08
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	2	3,200	247	296	0.10 *	0.11 *
SBR	0	0	65	58	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	29	22	0.02	0.01
WBT	2	3,200	1,029	343	0.34 *	0.12 *
WBR	0	0	67	41	0.00	0.00
N/S Critical Movements					0.12	0.13
E/W Critical Movements					0.34	0.12
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.56	0.35
Level of Service (LOS)					A	A

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	28	35	0.02 *	0.02 *
NBT	2	3,200	161	270	0.06	0.10
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	2	3,200	274	380	0.11 *	0.14 *
SBR	0	0	75	67	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	34	25	0.02	0.02
WBT	2	3,200	1,189	396	0.40 *	0.15 *
WBR	0	0	98	70	0.00	0.00
					0.13	0.16
					0.40	0.15
					0.00	0.00
					0.10	0.10
ICU					0.63	0.41
Level of Service (LOS)					B	A

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	28	35	0.02 *	0.02 *
NBT	2	3,200	165	266	0.06	0.09
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	2	3,200	260	397	0.10 *	0.15 *
SBR	0	0	75	67	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	34	23	0.02	0.01
WBT	2	3,200	1,189	396	0.40 *	0.15 *
WBR	0	0	102	68	0.00	0.00
N/S Critical Movements					0.12	0.17
E/W Critical Movements					0.40	0.15
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.62	0.42
Level of Service (LOS)					B	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	28	35	0.02 *	0.02 *
NBT	2	3,200	165	266	0.06	0.09
NBR	0	0	0	0	0.00	0.00
SBL	0	0	0	0	0.00	0.00
SBT	2	3,200	260	397	0.10 *	0.15 *
SBR	0	0	75	67	0.00	0.00
EBL	0	0	0	0	0.00 *	0.00 *
EBT	0	0	0	0	0.00	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	34	23	0.02	0.01
WBT	2	3,200	1,189	396	0.40 *	0.15 *
WBR	0	0	102	68	0.00	0.00
					0.12	0.17
					0.40	0.15
					0.00	0.00
					0.10	0.10
ICU					0.62	0.42
Level of Service (LOS)					B	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 49
North/South Roadway: Atlantic Ave
East/West Roadway: Broadway
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00 *	0.00
NBT	2	3,200	140	221	0.05	0.09 *
NBR	0	0	30	81	0.00	0.00
SBL	0	0	56	72	0.04	0.05 *
SBT	2	3,200	222	246	0.09 *	0.10
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	23	43	0.01	0.03
EBT	2	3,200	270	1,135	0.09 *	0.38 *
EBR	0	0	32	78	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.09	0.14
E/W Critical Movements					0.09	0.38
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.28	0.62
Level of Service (LOS)					A	B

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	2	3,200	151	237	0.06 *	0.10 *
NBR	0	0	31	84	0.00	0.00
SBL	0	0	67	115	0.04 *	0.07 *
SBT	2	3,200	234	285	0.09	0.13
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	24	45	0.02	0.03
EBT	2	3,200	273	1,154	0.10 *	0.39 *
EBR	0	0	37	90	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
					0.10	0.17
					0.10	0.39
					0.00	0.00
					0.10	0.10
ICU					0.30	0.66
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	2	3,200	154	236	0.06 *	0.10 *
NBR	0	0	31	84	0.00	0.00
SBL	0	0	59	127	0.04 *	0.08 *
SBT	2	3,200	228	292	0.09	0.13
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	24	45	0.02	0.03
EBT	2	3,200	270	1,158	0.10 *	0.39 *
EBR	0	0	37	90	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
N/S Critical Movements					0.10	0.18
E/W Critical Movements					0.10	0.39
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.30	0.67
Level of Service (LOS)					A	B

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	2	3,200	154	236	0.06 *	0.10 *
NBR	0	0	31	84	0.00	0.00
SBL	0	0	59	127	0.04 *	0.08 *
SBT	2	3,200	228	292	0.09	0.13
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	24	45	0.02	0.03
EBT	2	3,200	270	1,158	0.10 *	0.39 *
EBR	0	0	37	90	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00 *
WBT	0	0	0	0	0.00	0.00
WBR	0	0	0	0	0.00	0.00
					0.10	0.18
					0.10	0.39
					0.00	0.00
					0.10	0.10
ICU					0.30	0.67
Level of Service (LOS)					A	B

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 50
North/South Roadway: Atlantic Ave
East/West Roadway: Shoreline Ave-Ocean Blvd
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	5	0	0.00	0.00
NBT	1	1,600	2	3	0.01 *	0.00 *
NBR	0	0	5	0	0.00	0.00
SBL	0	0	64	93	0.04 *	0.06 *
SBT	1	1,600	3	4	0.00	0.00
SBR	1 0	1,600	172	142	0.00	0.00
EBL	1	1,600	31	117	0.02 *	0.07
EBT	3	4,800	518	1,667	0.11	0.35 *
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	7	11	0.00	0.01 *
WBT	3	4,800	1,852	890	0.40 *	0.20
WBR	0	0	46	72	0.00	0.00
N/S Critical Movements					0.05	0.06
E/W Critical Movements					0.42	0.36
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.57	0.52
Level of Service (LOS)					A	A

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
0	0	6	0	0.00	0.00
1	1,600	2	3	0.01 *	0.00 *
0	0	6	0	0.00	0.00
0	0	74	101	0.05 *	0.06 *
1	1,600	3	4	0.00	0.00
1 0	1,600	196	152	0.00	0.00
1	1,600	44	128	0.03 *	0.08
3	4,800	540	1,761	0.11	0.37 *
0	0	0	0	0.00	0.00
1	1,600	7	11	0.00	0.01 *
3	4,800	2,004	923	0.43 *	0.21
0	0	53	79	0.00	0.00
				0.06	0.06
				0.46	0.38
				0.00	0.00
				0.10	0.10
ICU				0.62	0.54
Level of Service (LOS)				B	A

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	6	0	0.00	0.00
NBT	1	1,600	2	3	0.01 *	0.00 *
NBR	0	0	6	0	0.00	0.00
SBL	0	0	74	105	0.05 *	0.07 *
SBT	1	1,600	3	4	0.00	0.00
SBR	1 0	1,600	191	151	0.00	0.00
EBL	1	1,600	44	127	0.03 *	0.08
EBT	3	4,800	564	1,772	0.12	0.37 *
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	7	11	0.00	0.01 *
WBT	3	4,800	2,046	908	0.44 *	0.21
WBR	0	0	47	79	0.00	0.00
N/S Critical Movements					0.06	0.07
E/W Critical Movements					0.47	0.38
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.63	0.55
Level of Service (LOS)					B	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
0	0	6	0	0.00	0.00
1	1,600	2	3	0.01 *	0.00 *
0	0	6	0	0.00	0.00
0	0	74	105	0.05 *	0.07 *
1	1,600	3	4	0.00	0.00
1 0	1,600	191	151	0.00	0.00
1	1,600	44	127	0.03 *	0.08
3	4,800	564	1,772	0.12	0.37 *
0	0	0	0	0.00	0.00
1	1,600	7	11	0.00	0.01 *
3	4,800	2,046	908	0.44 *	0.21
0	0	47	79	0.00	0.00
				0.06	0.07
				0.47	0.38
				0.00	0.00
				0.10	0.10
ICU				0.63	0.55
Level of Service (LOS)				B	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 51
North/South Roadway: Orange Avenue
East/West Roadway: Wardlow Road
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	51	61	0.03 *	0.04
NBT	1	1,600	339	607	0.23	0.42 *
NBR	0	0	35	61	0.00	0.00
SBL	1	1,600	26	28	0.02	0.02 *
SBT	1	1,600	610	467	0.44 *	0.34
SBR	0	0	87	71	0.00	0.00
EBL	1	1,600	85	161	0.05 *	0.10
EBT	2	3,200	318	691	0.12	0.24 *
EBR	0	0	65	79	0.00	0.00
WBL	1	1,600	71	41	0.04	0.03 *
WBT	2	3,200	374	370	0.13 *	0.13
WBR	0	0	29	42	0.00	0.00
N/S Critical Movements					0.47	0.44
E/W Critical Movements					0.18	0.27
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.75	0.81
Level of Service (LOS)					C	D

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	51	70	0.03 *	0.04
NBT	1	1,600	392	702	0.27	0.48 *
NBR	0	0	40	71	0.00	0.00
SBL	1	1,600	30	32	0.02	0.02 *
SBT	1	1,600	705	540	0.50 *	0.39
SBR	0	0	88	87	0.00	0.00
EBL	1	1,600	85	202	0.05	0.13
EBT	2	3,200	368	799	0.14 *	0.28 *
EBR	0	0	75	96	0.00	0.00
WBL	1	1,600	82	47	0.05 *	0.03 *
WBT	2	3,200	379	428	0.13	0.15
WBR	0	0	34	49	0.00	0.00
					0.53	0.50
					0.19	0.31
					0.00	0.00
					0.10	0.10
ICU					0.82	0.91
Level of Service (LOS)					D	E

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	59	63	0.04 *	0.04
NBT	1	1,600	392	702	0.27	0.48 *
NBR	0	0	37	71	0.00	0.00
SBL	1	1,600	27	32	0.02	0.02 *
SBT	1	1,600	705	540	0.50 *	0.38
SBR	0	0	101	72	0.00	0.00
EBL	1	1,600	98	176	0.06 *	0.11
EBT	2	3,200	324	799	0.12	0.28 *
EBR	0	0	75	88	0.00	0.00
WBL	1	1,600	80	41	0.05	0.03 *
WBT	2	3,200	432	387	0.15 *	0.14
WBR	0	0	32	49	0.00	0.00
N/S Critical Movements					0.54	0.50
E/W Critical Movements					0.21	0.31
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.85	0.91
Level of Service (LOS)					D	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	59	63	0.04 *	0.04
1	1,600	392	702	0.27	0.48 *
0	0	37	71	0.00	0.00
1	1,600	27	32	0.02	0.02 *
1	1,600	705	540	0.50 *	0.38
0	0	101	72	0.00	0.00
1	1,600	98	176	0.06 *	0.11
2	3,200	324	799	0.10	0.25 *
1 0	1,600	75	88	0.00	0.00
1	1,600	80	41	0.05	0.03 *
2	3,200	432	387	0.15 *	0.14
0	0	32	49	0.00	0.00
				0.54	0.50
				0.21	0.28
				0.00	0.00
				0.10	0.10
ICU				0.85	0.88
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 52
North/South Roadway: Orange Avenue
East/West Roadway: PCH
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	89	76	0.06	0.05 *
NBT	2		3,200	475	444	0.15 *	0.14
NBR	1	0	1,600	188	276	0.00	0.00
SBL	1		1,600	59	87	0.04 *	0.05
SBT	2		3,200	329	500	0.10	0.16 *
SBR	1	0	1,600	113	114	0.00	0.00
EBL	1		1,600	110	87	0.07 *	0.05
EBT	3		4,800	834	1,499	0.19	0.33 *
EBR	0		0	75	101	0.00	0.00
WBL	1		1,600	205	146	0.13	0.09 *
WBT	3		4,800	1,268	807	0.29 *	0.20
WBR	0		0	124	129	0.00	0.00
N/S Critical Movements						0.19	0.21
E/W Critical Movements						0.36	0.42
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.65	0.73
Level of Service (LOS)						B	C

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	103	88	0.06	0.05 *
NBT	2		3,200	549	513	0.17 *	0.16
NBR	1	0	1,600	217	319	0.00	0.00
SBL	1		1,600	66	92	0.04 *	0.06
SBT	2		3,200	380	578	0.12	0.18 *
SBR	1	0	1,600	122	138	0.00	0.00
EBL	1		1,600	119	93	0.07 *	0.06
EBT	3		4,800	964	1,732	0.22	0.39 *
EBR	0		0	87	117	0.00	0.00
WBL	1		1,600	237	169	0.15	0.11 *
WBT	3		4,800	1,466	810	0.33 *	0.20
WBR	0		0	140	149	0.00	0.00
						0.21	0.23
						0.40	0.50
						0.00	0.00
						0.10	0.10
ICU						0.71	0.83
Level of Service (LOS)						C	D

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	103	88	0.06	0.05 *
NBT	2		3,200	549	513	0.17 *	0.16
NBR	1	0	1,600	217	319	0.00	0.00
SBL	1		1,600	61	95	0.04 *	0.06
SBT	2		3,200	380	578	0.12	0.18 *
SBR	1	0	1,600	131	126	0.00	0.00
EBL	1		1,600	114	101	0.07 *	0.06
EBT	3		4,800	964	1,732	0.22	0.39 *
EBR	0		0	87	117	0.00	0.00
WBL	1		1,600	237	169	0.15	0.11 *
WBT	3		4,800	1,466	933	0.34 *	0.23
WBR	0		0	146	149	0.00	0.00
N/S Critical Movements						0.21	0.23
E/W Critical Movements						0.41	0.50
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.72	0.83
Level of Service (LOS)						C	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	103	88	0.06	0.05 *
NBT	2		3,200	549	513	0.17 *	0.16
NBR	1	0	1,600	217	319	0.00	0.00
SBL	1		1,600	61	95	0.04 *	0.06
SBT	2		3,200	380	578	0.12	0.18 *
SBR	1	0	1,600	131	126	0.00	0.00
EBL	1		1,600	114	101	0.07 *	0.06
EBT	3		4,800	964	1,732	0.22	0.39 *
EBR	0		0	87	117	0.00	0.00
WBL	1		1,600	237	169	0.15	0.11 *
WBT	3		4,800	1,466	933	0.34 *	0.23
WBR	0		0	146	149	0.00	0.00
						0.21	0.23
						0.41	0.50
						0.00	0.00
						0.10	0.10
ICU						0.72	0.83
Level of Service (LOS)						C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 53
North/South Roadway: Alamitos Avenue
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	75	69	0.05		0.04	
NBT	1		1,600	458	441	0.29	*	0.28	*
NBR	1	0	1,600	97	114	0.00		0.00	
SBL	1		1,600	57	67	0.04	*	0.04	*
SBT	1		1,600	376	433	0.24		0.27	
SBR	1	0	1,600	81	80	0.00		0.00	
EBL	1		1,600	61	99	0.04	*	0.06	
EBT	2		3,200	798	1,263	0.26		0.41	*
EBR	0		0	40	62	0.00		0.00	
WBL	1		1,600	98	80	0.06		0.05	*
WBT	2		3,200	1,128	875	0.37	*	0.30	
WBR	0		0	56	74	0.00		0.00	
N/S Critical Movements						0.33		0.32	
E/W Critical Movements						0.41		0.46	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.84		0.88	
Level of Service (LOS)						D		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	87	69	0.05		0.04	
1		1,600	529	510	0.33	*	0.32	*
1	0	1,600	112	132	0.00		0.00	
1		1,600	66	77	0.04	*	0.05	*
1		1,600	435	500	0.27		0.31	
1	0	1,600	94	92	0.00		0.00	
1		1,600	65	114	0.04	*	0.07	
2		3,200	922	1,460	0.30		0.48	*
0		0	41	64	0.00		0.00	
1		1,600	102	82	0.06		0.05	*
2		3,200	1,304	1,011	0.43	*	0.34	
0		0	60	86	0.00		0.00	
					0.37		0.37	
					0.47		0.53	
					0.00		0.00	
					0.10		0.10	
ICU					0.94		1.00	
Level of Service (LOS)					E		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	87	69	0.05		0.04	
NBT	1		1,600	529	510	0.33	*	0.32	*
NBR	1	0	1,600	112	132	0.00		0.00	
SBL	1		1,600	66	77	0.04	*	0.05	*
SBT	1		1,600	435	500	0.27		0.31	
SBR	1	0	1,600	94	92	0.00		0.00	
EBL	1		1,600	67	114	0.04	*	0.07	
EBT	2		3,200	922	1,460	0.30		0.48	*
EBR	0		0	42	70	0.00		0.00	
WBL	1		1,600	99	86	0.06		0.05	*
WBT	2		3,200	1,304	1,011	0.43	*	0.34	
WBR	0		0	60	86	0.00		0.00	
N/S Critical Movements						0.37		0.37	
E/W Critical Movements						0.47		0.53	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.94		1.00	
Level of Service (LOS)						E		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	87	69	0.05		0.04	
2		3,200	529	510	0.17	*	0.16	*
1	0	1,600	112	132	0.00		0.00	
1		1,600	66	77	0.04	*	0.05	*
2		3,200	435	500	0.14		0.16	
1	0	1,600	94	92	0.00		0.00	
1		1,600	67	114	0.04	*	0.07	
2		3,200	922	1,460	0.30		0.48	*
0		0	42	70	0.00		0.00	
1		1,600	99	86	0.06		0.05	*
2		3,200	1,304	1,011	0.43	*	0.34	
0		0	60	86	0.00		0.00	
					0.21		0.21	
					0.47		0.53	
					0.00		0.00	
					0.10		0.10	
ICU					0.78		0.84	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 54
North/South Roadway: Alamitos Ave
East/West Roadway: 7th St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	101	100	0.06	*	0.06	
NBT	1		1,600	329	429	0.21		0.27	*
NBR	2	0	3,200	378	778	0.00		0.00	
SBL	1		1,600	58	60	0.04		0.04	*
SBT	1		1,600	351	340	0.22	*	0.21	
SBR	1	0	1,600	113	65	0.00		0.00	
EBL	1		1,600	23	39	0.01	*	0.02	
EBT	2		3,200	330	737	0.12		0.24	*
EBR	0		0	38	41	0.00		0.00	
WBL	1		1,600	211	134	0.13		0.08	*
WBT	2		3,200	1,264	724	0.41	*	0.25	
WBR	0		0	60	61	0.00		0.00	
N/S Critical Movements						0.28		0.31	
E/W Critical Movements						0.42		0.32	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.80		0.73	
Level of Service (LOS)						C		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	117	116	0.07	*	0.07	
NBT	1		1,600	334	496	0.21		0.31	*
NBR	1	0	1,600	419	809	0.00		0.00	
SBL	1		1,600	67	69	0.04		0.04	*
SBT	1		1,600	406	393	0.25	*	0.25	
SBR	1	0	1,600	131	75	0.00		0.00	
EBL	1		1,600	27	45	0.02	*	0.03	
EBT	2		3,200	381	852	0.13		0.28	*
EBR	0		0	44	47	0.00		0.00	
WBL	1		1,600	252	164	0.16		0.10	*
WBT	2		3,200	1,461	751	0.48	*	0.26	
WBR	0		0	60	71	0.00		0.00	
						0.32		0.35	
						0.50		0.38	
						0.00		0.00	
						0.10		0.10	
ICU						0.92		0.83	
Level of Service (LOS)						E		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	104	116	0.07	*	0.07	
NBT	1		1,600	338	496	0.21		0.31	*
NBR	1	0	1,600	442	802	0.00		0.00	
SBL	1		1,600	67	69	0.04		0.04	*
SBT	1		1,600	406	350	0.25	*	0.22	
SBR	1	0	1,600	131	75	0.00		0.00	
EBL	1		1,600	27	45	0.02	*	0.03	
EBT	2		3,200	381	852	0.13		0.28	*
EBR	0		0	44	42	0.00		0.00	
WBL	1		1,600	237	177	0.15		0.11	*
WBT	2		3,200	1,461	725	0.48	*	0.25	
WBR	0		0	69	71	0.00		0.00	
N/S Critical Movements						0.32		0.35	
E/W Critical Movements						0.50		0.39	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.92		0.84	
Level of Service (LOS)						E		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	104	116	0.07	*	0.07	
NBT	1		1,600	338	496	0.21		0.31	*
NBR	1	0	1,600	442	802	0.00		0.00	
SBL	1		1,600	67	69	0.04		0.04	*
SBT	1		1,600	406	350	0.25	*	0.22	
SBR	1	0	1,600	131	75	0.00		0.00	
EBL	1		1,600	27	45	0.02	*	0.03	
EBT	2		3,200	381	852	0.13		0.28	*
EBR	0		0	44	42	0.00		0.00	
WBL	1		1,600	237	177	0.15		0.11	*
WBT	2		3,200	1,461	725	0.46	*	0.23	
WBR	1	0	1,600	69	71	0.00		0.00	
						0.32		0.35	
						0.48		0.39	
						0.00		0.00	
						0.10		0.10	
ICU						0.90		0.84	
Level of Service (LOS)						D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 55
North/South Roadway: Alamitos Ave
East/West Roadway: 6th St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	52	52	0.03	0.03 *
NBT	1		1,600	885	167	0.55 *	0.10
NBR	1	0	1,600	10	10	0.00	0.00
SBL	1		1,600	6	9	0.00 *	0.01
SBT	2		3,200	982	1,184	0.37	0.43 *
SBR	0		0	188	192	0.00	0.00
EBL	1		1,600	156	128	0.10 *	0.08 *
EBT	1		1,600	15	24	0.04	0.05
EBR	0		0	51	58	0.00	0.00
WBL	0		0	11	52	0.01	0.03
WBT	1		1,600	6	1,198	0.03 *	0.79 *
WBR	0		0	27	10	0.00	0.00
N/S Critical Movements						0.55	0.46
E/W Critical Movements						0.13	0.87
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.78	1.43
Level of Service (LOS)						C	F

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1		1,600	66	60	0.04 *	0.04 *
1		1,600	933	196	0.58	0.12
1	0	1,600	21	17	0.00	0.00
1		1,600	11	16	0.01	0.01
0.5		800	1,135	1,228	1.68 *	1.81 *
0		0	207	222	0.00	0.00
1		1,600	180	148	0.11 *	0.09 *
0.5		800	25	28	0.10	0.12
0		0	59	67	0.00	0.00
0		0	21	65	0.01	0.04
1		1,600	13	1,385	0.05 *	0.92 *
0		0	47	15	0.00	0.00
					1.72	1.85
					0.16	1.01
					0.00	0.00
					0.10	0.10
ICU					1.98	2.96
Level of Service (LOS)					F	F

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	66	60	0.04 *	0.04 *
NBT	1		1,600	973	192	0.61	0.12
NBR	1	0	1,600	30	16	0.00	0.00
SBL	1		1,600	15	16	0.01	0.01
SBT	0.5		800	1,135	1,261	1.67 *	1.85 *
SBR	0		0	203	222	0.00	0.00
EBL	1		1,600	180	148	0.11 *	0.09 *
EBT	0.5		800	33	28	0.11	0.12
EBR	0		0	59	67	0.00	0.00
WBL	0		0	19	64	0.01	0.04
WBT	1		1,600	11	1,385	0.05 *	0.91 *
WBR	0		0	45	15	0.00	0.00
N/S Critical Movements						1.71	1.89
E/W Critical Movements						0.16	1.00
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						1.97	2.99
Level of Service (LOS)						F	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1		1,600	66	60	0.04	0.04 *
1		1,600	973	192	0.61 *	0.12
1	0	1,600	30	16	0.00	0.00
1		1,600	15	16	0.01 *	0.01
3		4,800	1,135	1,261	0.28	0.31 *
0		0	203	222	0.00	0.00
1		1,600	180	148	0.11 *	0.09 *
1		1,600	33	28	0.06	0.06
0		0	59	67	0.00	0.00
0		0	19	64	0.01	0.04
3		4,800	11	1,385	0.02 *	0.30 *
0		0	45	15	0.00	0.00
					0.62	0.35
					0.13	0.39
					0.00	0.00
					0.10	0.10
ICU					0.85	0.84
Level of Service (LOS)					D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 56
North/South Roadway: Alamitos Ave
East/West Roadway: 3rd St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	324	128	0.20	*	0.08	
NBT	2		3,200	412	895	0.14		0.35	*
NBR	0		0	32	235	0.00		0.00	
SBL	1		1,600	23	115	0.01		0.07	*
SBT	1		1,600	570	483	0.36	*	0.30	
SBR	1	0	1,600	134	84	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	6	5	0.00		0.00	
WBT	2		3,200	547	193	0.20	*	0.07	*
WBR	0		0	73	37	0.00		0.00	
N/S Critical Movements						0.56		0.42	
E/W Critical Movements						0.20		0.07	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.86		0.59	
Level of Service (LOS)						D		A	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	374	148	0.23	*	0.09	
1		1,600	483	1,034	0.30		0.65	*
1	0	1,600	48	272	0.00		0.00	
1		1,600	27	133	0.02		0.08	*
0.5		800	634	575	0.40	*	0.36	
0.5	0	800	155	97	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
0		0	16	10	0.01		0.01	
2		3,200	632	223	0.23	*	0.09	*
0		0	76	50	0.00		0.00	
					0.63		0.73	
					0.23		0.09	
					0.00		0.00	
					0.10		0.10	
ICU					0.96		0.92	
Level of Service (LOS)					E		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	374	148	0.23	*	0.09	
NBT	1		1,600	531	1,034	0.33		0.65	*
NBR	1	0	1,600	49	272	0.00		0.00	
SBL	1		1,600	27	133	0.02		0.08	*
SBT	0.5		800	630	570	0.39	*	0.36	
SBR	0.5	0	800	155	88	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	25	6	0.02		0.00	
WBT	2		3,200	632	223	0.23	*	0.08	*
WBR	0		0	82	43	0.00		0.00	
N/S Critical Movements						0.62		0.73	
E/W Critical Movements						0.23		0.08	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.95		0.91	
Level of Service (LOS)						E		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	374	148	0.23	*	0.09	
2		3,200	531	1,034	0.18		0.41	*
0		0	49	272	0.00		0.00	
1		1,600	27	133	0.02		0.08	*
2		3,200	630	570	0.25	*	0.21	
0		0	155	88	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
0		0	0	0	0.00		0.00	
0		0	0	0	0.00		0.00	
0		0	25	6	0.02		0.00	
2		3,200	632	223	0.23	*	0.08	*
0		0	82	43	0.00		0.00	
					0.48		0.49	
					0.23		0.08	
					0.00		0.00	
					0.10		0.10	
ICU					0.81		0.67	
Level of Service (LOS)					D		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 57
North/South Roadway: Alamitos Ave
East/West Roadway: Broadway
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00	*	0.00	
NBT	2		3,200	292	760	0.10		0.31	*
NBR	0		0	39	230	0.00		0.00	
SBL	1		1,600	40	90	0.03		0.06	*
SBT	1		1,600	443	293	0.28	*	0.18	
SBR	0		0	0	0	0.00		0.00	
EBL	2		2,880	78	377	0.03		0.13	
EBT	2		3,200	231	875	0.07	*	0.27	*
EBR	1	0	1,600	30	52	0.00		0.00	
WBL	1		1,600	371	130	0.23	*	0.08	*
WBT	0		0	0	0	0.00		0.00	
WBR	1	0	1,600	324	161	0.00		0.00	
N/S Critical Movements						0.28		0.37	
E/W Critical Movements						0.30		0.35	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.68		0.82	
Level of Service (LOS)						B		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	0	0	0.00		0.00	
1		1,600	497	878	0.31	*	0.55	*
1	0	1,600	143	266	0.00		0.00	
1		1,600	113	130	0.07	*	0.08	*
1		1,600	443	349	0.28		0.22	
0		0	0	0	0.00		0.00	
1		1,600	90	436	0.06		0.27	
2		3,200	282	1,011	0.09	*	0.32	*
1	0	1,600	35	60	0.00		0.00	
1		1,600	429	150	0.27	*	0.09	*
0		0	0	0	0.00		0.00	
1	0	1,600	374	186	0.00		0.00	
					0.38		0.63	
					0.36		0.41	
					0.00		0.00	
					0.10		0.10	
ICU					0.84		1.14	
Level of Service (LOS)					D		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	1		1,600	545	878	0.34	*	0.55	*
NBR	1	0	1,600	147	266	0.00		0.00	
SBL	1		1,600	112	121	0.07	*	0.08	*
SBT	1		1,600	449	348	0.28		0.22	
SBR	0		0	0	0	0.00		0.00	
EBL	1		1,600	90	436	0.06		0.27	
EBT	2		3,200	280	1,011	0.09	*	0.32	*
EBR	1	0	1,600	35	60	0.00		0.00	
WBL	1		1,600	429	150	0.27	*	0.09	*
WBT	0		0	0	0	0.00		0.00	
WBR	1	0	1,600	374	186	0.00		0.00	
N/S Critical Movements						0.41		0.63	
E/W Critical Movements						0.36		0.41	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.87		1.14	
Level of Service (LOS)						D		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	0	0	0.00	*	0.00	
2		3,200	545	878	0.17		0.27	*
1	0	1,600	147	266	0.00		0.00	
1		1,600	112	121	0.07		0.08	*
1		1,600	449	348	0.28	*	0.22	
0		0	0	0	0.00		0.00	
2		2,880	90	436	0.03		0.15	
2		3,200	280	1,011	0.09	*	0.32	*
1	0	1,600	35	60	0.00		0.00	
1		1,600	429	150	0.27	*	0.09	*
0		0	0	0	0.00		0.00	
1	0	1,600	374	186	0.00		0.00	
					0.28		0.35	
					0.36		0.41	
					0.00		0.00	
					0.10		0.10	
ICU					0.74		0.86	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 58
North/South Roadway: Alamitos Ave
East/West Roadway: Shoreline Ave-Ocean Blvd
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	33	44	0.02	*	0.03	
NBT	2		3,200	72	467	0.02		0.15	*
NBR	1	0	1,600	144	435	0.00		0.00	
SBL	1		1,600	44	67	0.03		0.04	*
SBT	3		4,800	286	126	0.14	*	0.07	
SBR	0		0	395	213	0.00		0.00	
EBL	1		1,600	104	310	0.07	*	0.19	*
EBT	3		4,800	427	1,450	0.09		0.30	
EBR	1	0	1,600	40	53	0.00		0.00	
WBL	2		2,880	329	184	0.11		0.06	
WBT	2		3,200	1,434	714	0.46	*	0.25	*
WBR	0		0	52	90	0.00		0.00	
N/S Critical Movements						0.16		0.19	
E/W Critical Movements						0.53		0.44	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.79		0.73	
Level of Service (LOS)						C		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	45	51	0.03	*	0.03	
2		3,200	169	540	0.05		0.17	*
1	0	1,600	148	503	0.00		0.00	
1		1,600	51	77	0.03		0.05	*
2		3,200	331	146	0.07	*	0.03	
1	0	1,600	457	246	0.00		0.00	
1		1,600	277	325	0.17	*	0.20	*
3		4,800	497	1,533	0.10		0.32	
1	0	1,600	57	55	0.00		0.00	
2		2,880	380	213	0.13		0.07	
2		3,200	1,442	765	0.48	*	0.27	*
0		0	91	104	0.00		0.00	
					0.10		0.22	
					0.65		0.47	
					0.00		0.00	
					0.10		0.10	
ICU					0.85		0.79	
Level of Service (LOS)					D		C	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	55	51	0.03	*	0.03	
NBT	2		3,200	198	540	0.06		0.17	*
NBR	1	0	1,600	159	503	0.00		0.00	
SBL	1		1,600	51	77	0.03		0.05	*
SBT	2		3,200	331	133	0.07	*	0.04	
SBR	1	0	1,600	457	246	0.00		0.00	
EBL	1		1,600	301	322	0.19	*	0.20	*
EBT	3		4,800	496	1,535	0.10		0.32	
EBR	1	0	1,600	57	69	0.00		0.00	
WBL	2		2,880	380	216	0.13		0.08	
WBT	2		3,200	1,465	756	0.49	*	0.27	*
WBR	0		0	89	104	0.00		0.00	
N/S Critical Movements						0.10		0.22	
E/W Critical Movements						0.68		0.47	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.88		0.79	
Level of Service (LOS)						D		C	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	55	51	0.03	*	0.03	
2		3,200	198	540	0.06		0.17	*
1	0	1,600	159	503	0.00		0.00	
1		1,600	51	77	0.03		0.05	*
2		3,200	331	133	0.07	*	0.04	
1	0	1,600	457	246	0.00		0.00	
1		1,600	301	322	0.19	*	0.20	*
3		4,800	496	1,535	0.10		0.32	
1	0	1,600	57	69	0.00		0.00	
2		2,880	380	216	0.13		0.08	
2		3,200	1,465	756	0.49	*	0.27	*
0		0	89	104	0.00		0.00	
					0.10		0.22	
					0.68		0.47	
					0.00		0.00	
					0.10		0.10	
ICU					0.88		0.79	
Level of Service (LOS)					D		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 59
North/South Roadway: Cherry Avenue
East/West Roadway: Artesia Boulevard
Scenario: 0

EXISTING CONDITION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	127	124	0.08	*	0.08	*
NBT	2		3,200	765	870	0.24		0.27	
NBR	1	0	1,600	117	125	0.00		0.00	
SBL	2		2,880	155	115	0.05		0.04	
SBT	2		3,200	699	742	0.25	*	0.27	*
SBR	0		0	88	116	0.00		0.00	
EBL	1		1,600	191	176	0.12	*	0.11	
EBT	2		3,200	473	976	0.19		0.35	*
EBR	0		0	130	142	0.00		0.00	
WBL	1		1,600	103	117	0.06		0.07	*
WBT	2		3,200	722	522	0.27	*	0.22	
WBR	0		0	134	184	0.00		0.00	
N/S Critical Movements						0.33		0.35	
E/W Critical Movements						0.39		0.42	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.82		0.87	
Level of Service (LOS)						D		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	147	165	0.09	*	0.10	*
2		3,200	884	1,006	0.28		0.31	
1	0	1,600	122	144	0.00		0.00	
2		2,880	178	133	0.06		0.05	
2		3,200	808	858	0.28	*	0.31	*
0		0	89	134	0.00		0.00	
1		1,600	221	203	0.14	*	0.13	
2		3,200	534	1,128	0.21		0.41	*
0		0	150	194	0.00		0.00	
1		1,600	119	118	0.07		0.07	*
2		3,200	834	554	0.31	*	0.24	
0		0	155	213	0.00		0.00	
					0.37		0.41	
					0.45		0.48	
					0.00		0.00	
					0.10		0.10	
ICU					0.92		0.99	
Level of Service (LOS)					E		E	

PROPOSED LAND USE ELEMENT

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	147	174	0.09		0.11	*
NBT	2		3,200	884	1,006	0.28	*	0.31	
NBR	1	0	1,600	123	144	0.00		0.00	
SBL	2		2,880	191	133	0.07	*	0.05	
SBT	2		3,200	723	858	0.25		0.31	*
SBR	0		0	92	134	0.00		0.00	
EBL	1		1,600	221	177	0.14	*	0.11	
EBT	2		3,200	522	1,128	0.21		0.42	*
EBR	0		0	150	208	0.00		0.00	
WBL	1		1,600	119	120	0.07		0.08	*
WBT	2		3,200	834	537	0.31	*	0.23	
WBR	0		0	155	213	0.00		0.00	
N/S Critical Movements						0.35		0.42	
E/W Critical Movements						0.45		0.50	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.90		1.02	
Level of Service (LOS)						D		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	147	174	0.09		0.11	*
2		3,200	884	1,006	0.28	*	0.31	
1	0	1,600	123	144	0.00		0.00	
2		2,880	191	133	0.07	*	0.05	
2		3,200	723	858	0.23		0.27	*
0		0	92	134	0.00		0.00	
1		1,600	221	177	0.14	*	0.11	
3		4,800	522	1,128	0.14		0.28	*
0		0	150	208	0.00		0.00	
1		1,600	119	120	0.07		0.08	*
2		3,200	834	537	0.31	*	0.23	
0		0	155	213	0.00		0.00	
					0.35		0.38	
					0.45		0.36	
					0.00		0.00	
					0.10		0.10	
ICU					0.90		0.84	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 60
North/South Roadway: Cherry Avenue
East/West Roadway: Market Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	59	127	0.04 *	0.08
NBT	2	3,200	692	1,092	0.25	0.43 *
NBR	0	0	102	282	0.00	0.00
SBL	1	1,600	129	160	0.08	0.10 *
SBT	2	3,200	1,146	794	0.38 *	0.27
SBR	0	0	56	79	0.00	0.00
EBL	1	1,600	82	113	0.05	0.07
EBT	2	3,200	370	558	0.16 *	0.20 *
EBR	0	0	154	79	0.00	0.00
WBL	1	1,600	119	107	0.07 *	0.07 *
WBT	2	3,200	392	396	0.15	0.16
WBR	0	0	96	117	0.00	0.00
N/S Critical Movements					0.42	0.53
E/W Critical Movements					0.23	0.27
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.75	0.90
Level of Service (LOS)					C	D

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	81	147	0.05 *	0.09
2	3,200	800	1,262	0.29	0.50 *
0	0	118	326	0.00	0.00
1	1,600	149	224	0.09	0.14 *
2	3,200	1,325	918	0.45 *	0.32
0	0	115	112	0.00	0.00
1	1,600	87	126	0.05	0.08
2	3,200	428	645	0.19 *	0.23 *
0	0	178	91	0.00	0.00
1	1,600	138	124	0.09 *	0.08 *
2	3,200	453	458	0.18	0.18
0	0	111	134	0.00	0.00
				0.50	0.64
				0.28	0.31
				0.00	0.00
				0.10	0.10
ICU				0.88	1.05
Level of Service (LOS)				D	F

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	80	147	0.05 *	0.09
NBT	2	3,200	800	1,262	0.29	0.50 *
NBR	0	0	118	326	0.00	0.00
SBL	1	1,600	149	222	0.09	0.14 *
SBT	2	3,200	1,155	918	0.39 *	0.32
SBR	0	0	101	115	0.00	0.00
EBL	1	1,600	95	117	0.06	0.07
EBT	2	3,200	428	645	0.19 *	0.23 *
EBR	0	0	178	91	0.00	0.00
WBL	1	1,600	138	124	0.09 *	0.08 *
WBT	2	3,200	453	458	0.18	0.18
WBR	0	0	111	119	0.00	0.00
N/S Critical Movements					0.44	0.64
E/W Critical Movements					0.28	0.31
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.82	1.05
Level of Service (LOS)					D	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	80	147	0.05 *	0.09
2	3,200	800	1,262	0.25	0.39 *
1 0	1,600	118	326	0.00	0.00
1	1,600	149	222	0.09	0.14 *
2	3,200	1,155	918	0.39 *	0.32
0	0	101	115	0.00	0.00
1	1,600	95	117	0.06 *	0.07 *
3	4,800	428	645	0.13	0.15
0	0	178	91	0.00	0.00
1	1,600	138	124	0.09	0.08
2	3,200	453	458	0.18 *	0.18 *
0	0	111	119	0.00	0.00
				0.44	0.53
				0.24	0.25
				0.00	0.00
				0.10	0.10
ICU				0.78	0.88
Level of Service (LOS)				C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 61
North/South Roadway: Cherry Avenue
East/West Roadway: Del Amo Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	113	188	0.07	*	0.12	
NBT	3		4,800	607	1,248	0.13		0.26	*
NBR	1	0	1,600	205	340	0.00		0.00	
SBL	1		1,600	131	100	0.08		0.06	*
SBT	3		4,800	1,262	794	0.26	*	0.17	
SBR	1	0	1,600	145	88	0.00		0.00	
EBL	1		1,600	104	199	0.07	*	0.12	
EBT	3		4,800	611	1,078	0.13		0.22	*
EBR	1	0	1,600	193	235	0.00		0.00	
WBL	1		1,600	326	329	0.20		0.21	*
WBT	3		4,800	1,222	719	0.27	*	0.17	
WBR	0		0	68	120	0.00		0.00	
N/S Critical Movements						0.33		0.32	
E/W Critical Movements						0.34		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.77		0.85	
Level of Service (LOS)						C		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	131	217	0.08	*	0.14	
3		4,800	702	1,442	0.15		0.30	*
1	0	1,600	212	393	0.00		0.00	
1		1,600	151	116	0.09		0.07	*
3		4,800	1,459	918	0.30	*	0.19	
1	0	1,600	168	102	0.00		0.00	
1		1,600	120	230	0.08	*	0.14	
3		4,800	706	1,246	0.15		0.26	*
1	0	1,600	223	272	0.00		0.00	
1		1,600	372	380	0.23		0.24	*
3		4,800	1,412	831	0.31	*	0.20	
0		0	79	139	0.00		0.00	
					0.38		0.37	
					0.39		0.50	
					0.00		0.00	
					0.10		0.10	
ICU					0.87		0.97	
Level of Service (LOS)					D		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	131	140	0.08	*	0.09	
NBT	3		4,800	702	1,123	0.15		0.23	*
NBR	1	0	1,600	206	303	0.00		0.00	
SBL	1		1,600	151	370	0.09		0.23	*
SBT	3		4,800	1,459	752	0.30	*	0.16	
SBR	1	0	1,600	168	55	0.00		0.00	
EBL	1		1,600	120	137	0.08	*	0.09	
EBT	3		4,800	706	1,062	0.15		0.22	*
EBR	1	0	1,600	196	72	0.00		0.00	
WBL	1		1,600	389	312	0.24		0.20	*
WBT	3		4,800	1,412	653	0.31	*	0.19	
WBR	0		0	79	266	0.00		0.00	
N/S Critical Movements						0.38		0.46	
E/W Critical Movements						0.39		0.42	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.87		0.98	
Level of Service (LOS)						D		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	131	140	0.08	*	0.09	
3		4,800	702	1,123	0.15		0.23	*
1	0	1,600	206	303	0.00		0.00	
2		2,880	151	370	0.05		0.13	*
3		4,800	1,459	752	0.30	*	0.16	
1	0	1,600	168	55	0.00		0.00	
1		1,600	120	137	0.08	*	0.09	
3		4,800	706	1,062	0.15		0.22	*
1	0	1,600	196	72	0.00		0.00	
1		1,600	389	312	0.24		0.20	*
3		4,800	1,412	653	0.31	*	0.19	
0		0	79	266	0.00		0.00	
					0.38		0.36	
					0.39		0.42	
					0.00		0.00	
					0.10		0.10	
ICU					0.87		0.88	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 62
North/South Roadway: Cherry Avenue
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	104	140	0.07	*	0.09	
NBT	3		4,800	579	1,123	0.12		0.23	*
NBR	1	0	1,600	176	303	0.00		0.00	
SBL	2		2,880	310	370	0.11		0.13	*
SBT	4		6,400	1,270	752	0.20	*	0.12	
SBR	1	0	1,600	67	55	0.00		0.00	
EBL	2		2,880	58	137	0.02		0.05	
EBT	3		4,800	604	1,062	0.15	*	0.24	*
EBR	0		0	99	72	0.00		0.00	
WBL	2		2,880	373	312	0.13	*	0.11	*
WBT	3		4,800	754	653	0.19		0.19	
WBR	0		0	170	266	0.00		0.00	
N/S Critical Movements						0.27		0.36	
E/W Critical Movements						0.28		0.35	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.65		0.81	
Level of Service (LOS)						B		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	120	162	0.08	*	0.10	
3		4,800	669	1,298	0.14		0.27	*
1	0	1,600	203	350	0.00		0.00	
2		2,880	358	428	0.12		0.15	*
4		6,400	1,468	869	0.23	*	0.14	
1	0	1,600	77	58	0.00		0.00	
2		2,880	67	139	0.02		0.05	
3		4,800	698	1,227	0.17	*	0.27	*
0		0	114	83	0.00		0.00	
2		2,880	431	361	0.15	*	0.13	*
3		4,800	871	755	0.22		0.22	
0		0	196	307	0.00		0.00	
					0.31		0.42	
					0.32		0.40	
					0.00		0.00	
					0.10		0.10	
ICU					0.73		0.92	
Level of Service (LOS)					C		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	120	162	0.08	*	0.10	
NBT	3		4,800	669	1,298	0.14		0.27	*
NBR	1	0	1,600	203	350	0.00		0.00	
SBL	2		2,880	358	428	0.12		0.15	*
SBT	4		6,400	1,325	869	0.21	*	0.14	
SBR	1	0	1,600	77	64	0.00		0.00	
EBL	2		2,880	67	140	0.02		0.05	
EBT	3		4,800	698	1,227	0.17	*	0.27	*
EBR	0		0	114	83	0.00		0.00	
WBL	2		2,880	383	361	0.13	*	0.13	*
WBT	3		4,800	871	755	0.22		0.22	
WBR	0		0	196	307	0.00		0.00	
N/S Critical Movements						0.29		0.42	
E/W Critical Movements						0.30		0.40	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.69		0.92	
Level of Service (LOS)						B		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	120	162	0.08	*	0.10	
4		6,400	669	1,298	0.10		0.20	*
1	0	1,600	203	350	0.00		0.00	
2		2,880	358	428	0.12		0.15	*
4		6,400	1,325	869	0.21	*	0.14	
1	0	1,600	77	64	0.00		0.00	
2		2,880	67	140	0.02		0.05	
3		4,800	698	1,227	0.17	*	0.27	*
0		0	114	83	0.00		0.00	
2		2,880	383	361	0.13	*	0.13	*
3		4,800	871	755	0.22		0.22	
0		0	196	307	0.00		0.00	
					0.29		0.35	
					0.30		0.40	
					0.00		0.00	
					0.10		0.10	
ICU					0.69		0.85	
Level of Service (LOS)					B		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 63
North/South Roadway: Cherry Avenue
East/West Roadway: Wardlow Road
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	183	147	0.11	*	0.09	
NBT	2		3,200	1,213	1,689	0.38		0.53	*
NBR	1	0	1,600	42	50	0.00		0.00	
SBL	1		1,600	47	34	0.03		0.02	*
SBT	3		4,800	1,851	1,555	0.44	*	0.37	
SBR	0		0	249	226	0.00		0.00	
EBL	2		2,400	262	505	0.11	*	0.21	*
EBT	2		2,400	23	26	0.06		0.07	
EBR	0		0	131	148	0.00		0.00	
WBL	2		2,400	39	68	0.02		0.03	
WBT	2		2,400	17	22	0.02	*	0.03	*
WBR	0		0	23	48	0.00		0.00	
N/S Critical Movements						0.55		0.55	
E/W Critical Movements						0.13		0.24	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.78		0.89	
Level of Service (LOS)						C		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	183	170	0.11	*	0.11	
2		3,200	1,402	1,952	0.44		0.61	*
1	0	1,600	42	58	0.00		0.00	
1		1,600	47	39	0.03		0.02	*
3		4,800	2,139	1,797	0.50	*	0.43	
0		0	249	261	0.00		0.00	
2		2,400	303	512	0.13	*	0.21	*
2		2,400	23	28	0.07		0.08	
0		0	151	154	0.00		0.00	
2		2,400	45	68	0.02		0.03	
2		2,400	17	23	0.02	*	0.03	*
0		0	23	55	0.00		0.00	
					0.61		0.63	
					0.15		0.24	
					0.00		0.00	
					0.10		0.10	
ICU					0.86		0.97	
Level of Service (LOS)					D		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	212	153	0.13	*	0.10	
NBT	2		3,200	1,402	1,691	0.44		0.53	*
NBR	1	0	1,600	49	51	0.00		0.00	
SBL	1		1,600	48	39	0.03		0.02	*
SBT	3		4,800	1,906	1,797	0.45	*	0.43	
SBR	0		0	253	261	0.00		0.00	
EBL	2		2,400	303	515	0.13	*	0.21	*
EBT	2		2,400	23	27	0.06		0.08	
EBR	0		0	132	154	0.00		0.00	
WBL	2		2,400	39	68	0.02		0.03	
WBT	2		2,400	17	22	0.02	*	0.03	*
WBR	0		0	23	55	0.00		0.00	
N/S Critical Movements						0.58		0.55	
E/W Critical Movements						0.15		0.24	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.83		0.89	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	212	153	0.13	*	0.10	
2		3,200	1,402	1,691	0.44		0.53	*
1	0	1,600	49	51	0.00		0.00	
1		1,600	48	39	0.03		0.02	*
3		4,800	1,906	1,797	0.45	*	0.43	
0		0	253	261	0.00		0.00	
2		2,400	303	515	0.13	*	0.21	*
2		2,400	23	27	0.06		0.08	
0		0	132	154	0.00		0.00	
2		2,400	39	68	0.02		0.03	
2		2,400	17	22	0.02	*	0.03	*
0		0	23	55	0.00		0.00	
					0.58		0.55	
					0.15		0.24	
					0.00		0.00	
					0.10		0.10	
ICU					0.83		0.89	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 64
North/South Roadway: Cherry Avenue
East/West Roadway: Willow Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	193	150	0.12 *	0.09 *
NBT	3		4,800	1,050	745	0.22	0.16
NBR	1	0	1,600	222	217	0.00	0.00
SBL	2		2,880	182	308	0.06	0.11
SBT	3		4,800	752	911	0.18 *	0.22 *
SBR	0		0	128	158	0.00	0.00
EBL	2		2,880	186	197	0.06	0.07
EBT	3		4,800	972	1,251	0.22 *	0.29 *
EBR	0		0	88	134	0.00	0.00
WBL	2		2,880	249	311	0.09 *	0.11 *
WBT	3		4,800	1,030	962	0.24	0.24
WBR	0		0	116	213	0.00	0.00
N/S Critical Movements						0.30	0.31
E/W Critical Movements						0.31	0.40
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.71	0.81
Level of Service (LOS)						C	D

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	223	173	0.14 *	0.11 *
NBT	3		4,800	1,214	861	0.25	0.18
NBR	1	0	1,600	257	251	0.00	0.00
SBL	2		2,880	210	356	0.07	0.12
SBT	3		4,800	869	1,053	0.21 *	0.26 *
SBR	0		0	148	183	0.00	0.00
EBL	2		2,880	188	228	0.07	0.08
EBT	3		4,800	1,123	1,446	0.26 *	0.33 *
EBR	0		0	102	155	0.00	0.00
WBL	2		2,880	288	359	0.10 *	0.12 *
WBT	3		4,800	1,190	1,112	0.27	0.28
WBR	0		0	116	246	0.00	0.00
						0.35	0.37
						0.36	0.45
						0.00	0.00
						0.10	0.10
ICU						0.81	0.92
Level of Service (LOS)						D	E

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1		1,600	223	160	0.14 *	0.10 *
NBT	3		4,800	1,214	861	0.25	0.18
NBR	1	0	1,600	257	251	0.00	0.00
SBL	2		2,880	210	356	0.07	0.12
SBT	3		4,800	792	1,053	0.19 *	0.25 *
SBR	0		0	130	160	0.00	0.00
EBL	2		2,880	192	228	0.07 *	0.08
EBT	3		4,800	1,123	1,446	0.25	0.33 *
EBR	0		0	90	155	0.00	0.00
WBL	2		2,880	288	359	0.10	0.12 *
WBT	3		4,800	1,190	974	0.28 *	0.25
WBR	0		0	134	246	0.00	0.00
N/S Critical Movements						0.33	0.35
E/W Critical Movements						0.35	0.45
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.78	0.90
Level of Service (LOS)						C	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1		1,600	223	160	0.14 *	0.10 *
3		4,800	1,214	861	0.25	0.18
1	0	1,600	257	251	0.00	0.00
2		2,880	210	356	0.07	0.12
3		4,800	792	1,053	0.19 *	0.25 *
0		0	130	160	0.00	0.00
2		2,880	192	228	0.07 *	0.08
3		4,800	1,123	1,446	0.25	0.33 *
0		0	90	155	0.00	0.00
2		2,880	288	359	0.10	0.12 *
3		4,800	1,190	974	0.28 *	0.25
0		0	134	246	0.00	0.00
					0.33	0.35
					0.35	0.45
					0.00	0.00
					0.10	0.10
ICU					0.78	0.90
Level of Service (LOS)					C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 65
North/South Roadway: Cherry Avenue
East/West Roadway: PCH
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	86	60	0.05	0.04
NBT	2	3,200	530	409	0.17 *	0.14 *
NBR	0	0	22	32	0.00	0.00
SBL	1	1,600	142	193	0.09 *	0.12 *
SBT	2	3,200	365	585	0.11	0.18
SBR	1 0	1,600	264	213	0.00	0.00
EBL	1	1,600	174	209	0.11 *	0.13
EBT	3	4,800	883	1,496	0.20	0.33 *
EBR	0	0	77	87	0.00	0.00
WBL	1	1,600	35	72	0.02	0.05 *
WBT	3	4,800	1,255	948	0.30 *	0.23
WBR	0	0	181	164	0.00	0.00
N/S Critical Movements					0.26	0.26
E/W Critical Movements					0.41	0.38
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.77	0.74
Level of Service (LOS)					C	C

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	89	61	0.06	0.04
NBT	2	3,200	613	473	0.20 *	0.16 *
NBR	0	0	25	37	0.00	0.00
SBL	1	1,600	164	223	0.10 *	0.14 *
SBT	2	3,200	422	676	0.13	0.21
SBR	1 0	1,600	269	246	0.00	0.00
EBL	1	1,600	201	242	0.13 *	0.15
EBT	3	4,800	1,021	1,729	0.23	0.38 *
EBR	0	0	89	87	0.00	0.00
WBL	1	1,600	40	83	0.03	0.05 *
WBT	3	4,800	1,450	1,096	0.35 *	0.27
WBR	0	0	209	190	0.00	0.00
					0.30	0.30
					0.48	0.43
					0.00	0.00
					0.10	0.10
ICU					0.88	0.83
Level of Service (LOS)					D	D

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	92	64	0.06	0.04
NBT	2	3,200	613	473	0.20 *	0.16 *
NBR	0	0	25	37	0.00	0.00
SBL	1	1,600	164	223	0.10 *	0.14 *
SBT	2	3,200	422	676	0.13	0.21
SBR	1 0	1,600	281	246	0.00	0.00
EBL	1	1,600	201	242	0.13 *	0.15
EBT	3	4,800	1,021	1,729	0.23	0.38 *
EBR	0	0	89	91	0.00	0.00
WBL	1	1,600	40	83	0.03	0.05 *
WBT	3	4,800	1,450	1,096	0.35 *	0.27
WBR	0	0	209	190	0.00	0.00
N/S Critical Movements					0.30	0.30
E/W Critical Movements					0.48	0.43
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.88	0.83
Level of Service (LOS)					D	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	92	64	0.06	0.04
NBT	2	3,200	613	473	0.20 *	0.16 *
NBR	0	0	25	37	0.00	0.00
SBL	1	1,600	164	223	0.10 *	0.14 *
SBT	2	3,200	422	676	0.13	0.21
SBR	1 0	1,600	281	246	0.00	0.00
EBL	1	1,600	201	242	0.13 *	0.15
EBT	3	4,800	1,021	1,729	0.23	0.38 *
EBR	0	0	89	91	0.00	0.00
WBL	1	1,600	40	83	0.03	0.05 *
WBT	3	4,800	1,450	1,096	0.35 *	0.27
WBR	0	0	209	190	0.00	0.00
					0.30	0.30
					0.48	0.43
					0.00	0.00
					0.10	0.10
ICU					0.88	0.83
Level of Service (LOS)					D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 66
North/South Roadway: Cherry Avenue
East/West Roadway: 7th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	47	40	0.03	0.03 *
NBT	1	1,600	229	221	0.20 *	0.18
NBR	0	0	91	74	0.00	0.00
SBL	1	1,600	100	79	0.06 *	0.05
SBT	1	1,600	200	273	0.15	0.20 *
SBR	0	0	33	51	0.00	0.00
EBL	1	1,600	39	73	0.02 *	0.05
EBT	2	3,200	916	1,336	0.29	0.43 *
EBR	0	0	21	33	0.00	0.00
WBL	1	1,600	63	67	0.04	0.04 *
WBT	2	3,200	1,295	937	0.42 *	0.31
WBR	0	0	59	55	0.00	0.00
N/S Critical Movements					0.26	0.23
E/W Critical Movements					0.44	0.47
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.80	0.80
Level of Service (LOS)					C	C

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	47	42	0.03	0.03
1	1,600	265	255	0.23 *	0.21 *
0	0	105	86	0.00	0.00
1	1,600	116	91	0.07 *	0.06 *
1	1,600	231	316	0.17	0.23
0	0	38	59	0.00	0.00
1	1,600	45	84	0.03 *	0.05
2	3,200	1,059	1,544	0.34	0.49 *
0	0	24	35	0.00	0.00
1	1,600	73	67	0.05	0.04 *
2	3,200	1,497	1,083	0.49 *	0.36
0	0	68	64	0.00	0.00
				0.30	0.27
				0.52	0.53
				0.00	0.00
				0.10	0.10
ICU				0.92	0.90
Level of Service (LOS)				E	D

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	54	42	0.03	0.03
NBT	1	1,600	265	255	0.23 *	0.21 *
NBR	0	0	105	86	0.00	0.00
SBL	1	1,600	116	91	0.07 *	0.06 *
SBT	1	1,600	231	316	0.17	0.23
SBR	0	0	38	59	0.00	0.00
EBL	1	1,600	45	73	0.03 *	0.05
EBT	2	3,200	1,059	1,544	0.34	0.49 *
EBR	0	0	24	36	0.00	0.00
WBL	1	1,600	73	77	0.05	0.05 *
WBT	2	3,200	1,299	1,083	0.42 *	0.36
WBR	0	0	59	64	0.00	0.00
N/S Critical Movements					0.30	0.27
E/W Critical Movements					0.45	0.54
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.85	0.91
Level of Service (LOS)					D	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	54	42	0.03	0.03
1	1,600	265	255	0.23 *	0.21 *
0	0	105	86	0.00	0.00
1	1,600	116	91	0.07 *	0.06 *
1	1,600	231	316	0.17	0.23
0	0	38	59	0.00	0.00
1	1,600	45	73	0.03 *	0.05
2	3,200	1,059	1,544	0.33	0.48 *
1 0	1,600	24	36	0.00	0.00
1	1,600	73	77	0.05	0.05 *
2	3,200	1,299	1,083	0.42 *	0.36
0	0	59	64	0.00	0.00
				0.30	0.27
				0.45	0.53
				0.00	0.00
				0.10	0.10
ICU				0.85	0.90
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 67
North/South Roadway: Paramount Boulevard
East/West Roadway: Artesia Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	167	126	0.10	*	0.08	
NBT	2		3,200	695	854	0.22		0.27	*
NBR	1	0	1,600	59	103	0.00		0.00	
SBL	2		2,880	74	116	0.03		0.04	*
SBT	2		3,200	750	575	0.23	*	0.18	
SBR	1	0	1,600	103	84	0.00		0.00	
EBL	1		1,600	108	201	0.07	*	0.13	*
EBT	3		4,800	429	863	0.12		0.21	
EBR	0		0	133	153	0.00		0.00	
WBL	1		1,600	115	84	0.07		0.05	
WBT	3		4,800	706	488	0.17	*	0.13	*
WBR	0		0	131	153	0.00		0.00	
N/S Critical Movements						0.33		0.31	
E/W Critical Movements						0.24		0.26	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.67		0.67	
Level of Service (LOS)						B		B	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	173	146	0.11	*	0.09	
NBT	2		3,200	803	987	0.25		0.31	*
NBR	1	0	1,600	64	119	0.00		0.00	
SBL	2		2,880	84	134	0.03		0.05	*
SBT	2		3,200	867	665	0.27	*	0.21	
SBR	1	0	1,600	113	97	0.00		0.00	
EBL	1		1,600	125	232	0.08	*	0.15	*
EBT	3		4,800	515	997	0.14		0.24	
EBR	0		0	140	177	0.00		0.00	
WBL	1		1,600	133	84	0.08		0.05	
WBT	3		4,800	816	489	0.20	*	0.14	*
WBR	0		0	151	177	0.00		0.00	
						0.38		0.36	
						0.28		0.29	
						0.00		0.00	
						0.10		0.10	
ICU						0.76		0.75	
Level of Service (LOS)						C		C	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	193	146	0.12	*	0.09	
NBT	2		3,200	803	987	0.25		0.31	*
NBR	1	0	1,600	67	119	0.00		0.00	
SBL	2		2,880	97	134	0.03		0.05	*
SBT	2		3,200	793	665	0.25	*	0.21	
SBR	1	0	1,600	114	97	0.00		0.00	
EBL	1		1,600	125	232	0.08	*	0.15	*
EBT	3		4,800	532	997	0.14		0.24	
EBR	0		0	133	177	0.00		0.00	
WBL	1		1,600	133	85	0.08		0.05	
WBT	3		4,800	816	564	0.20	*	0.15	*
WBR	0		0	151	154	0.00		0.00	
N/S Critical Movements						0.37		0.36	
E/W Critical Movements						0.28		0.30	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.75		0.76	
Level of Service (LOS)						C		C	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	193	146	0.12	*	0.09	
2		3,200	803	987	0.25		0.31	*
1	0	1,600	67	119	0.00		0.00	
2		2,880	97	134	0.03		0.05	*
2		3,200	793	665	0.25	*	0.21	
1	0	1,600	114	97	0.00		0.00	
1		1,600	125	232	0.08	*	0.15	*
3		4,800	532	997	0.14		0.24	
0		0	133	177	0.00		0.00	
1		1,600	133	85	0.08		0.05	
3		4,800	816	564	0.20	*	0.15	*
0		0	151	154	0.00		0.00	
					0.37		0.36	
					0.28		0.30	
					0.00		0.00	
					0.10		0.10	
ICU					0.75		0.76	
Level of Service (LOS)					C		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 68
North/South Roadway: Paramount Boulevard
East/West Roadway: South Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	99	135	0.06 *	0.08 *
NBT	3	4,800	587	657	0.15	0.18
NBR	0	0	156	191	0.00	0.00
SBL	1	1,600	113	131	0.07	0.08
SBT	2	3,200	531	571	0.20 *	0.22 *
SBR	0	0	114	126	0.00	0.00
EBL	1	1,600	92	114	0.06	0.07
EBT	2	3,200	588	860	0.22 *	0.32 *
EBR	0	0	103	168	0.00	0.00
WBL	1	1,600	125	185	0.08 *	0.12 *
WBT	2	3,200	604	713	0.23	0.25
WBR	0	0	137	101	0.00	0.00
N/S Critical Movements					0.26	0.30
E/W Critical Movements					0.30	0.44
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.66	0.84
Level of Service (LOS)					B	D

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	114	156	0.07 *	0.10 *
3	4,800	678	759	0.18	0.20
0	0	180	216	0.00	0.00
1	1,600	172	148	0.11	0.09
2	3,200	614	660	0.23 *	0.25 *
0	0	132	146	0.00	0.00
1	1,600	106	132	0.07	0.08
2	3,200	667	994	0.25 *	0.37 *
0	0	119	194	0.00	0.00
1	1,600	175	217	0.11 *	0.14 *
2	3,200	654	824	0.27	0.30
0	0	221	125	0.00	0.00
				0.30	0.35
				0.36	0.51
				0.00	0.00
				0.10	0.10
ICU				0.76	0.96
Level of Service (LOS)				C	E

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	114	156	0.07	0.10 *
NBT	3	4,800	678	759	0.18 *	0.21
NBR	0	0	189	228	0.00	0.00
SBL	1	1,600	174	152	0.11 *	0.10
SBT	2	3,200	541	660	0.21	0.25 *
SBR	0	0	132	146	0.00	0.00
EBL	1	1,600	106	132	0.07	0.08
EBT	2	3,200	603	994	0.23 *	0.37 *
EBR	0	0	119	194	0.00	0.00
WBL	1	1,600	193	228	0.12 *	0.14 *
WBT	2	3,200	653	824	0.27	0.30
WBR	0	0	210	129	0.00	0.00
N/S Critical Movements					0.29	0.35
E/W Critical Movements					0.35	0.51
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.74	0.96
Level of Service (LOS)					C	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	114	156	0.07	0.10 *
3	4,800	678	759	0.18 *	0.21
0	0	189	228	0.00	0.00
1	1,600	174	152	0.11 *	0.10
2	3,200	541	660	0.21	0.25 *
0	0	132	146	0.00	0.00
1	1,600	106	132	0.07 *	0.08
2	3,200	603	994	0.19	0.31 *
1 0	1,600	119	194	0.00	0.00
1	1,600	193	228	0.12	0.14 *
2	3,200	653	824	0.27 *	0.30
0	0	210	129	0.00	0.00
				0.29	0.35
				0.34	0.45
				0.00	0.00
				0.10	0.10
ICU				0.73	0.90
Level of Service (LOS)				C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 69
North/South Roadway: Paramount Boulevard
East/West Roadway: Del Amo Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	119	167	0.07	*	0.10	
NBT	2		3,200	428	803	0.16		0.31	*
NBR	0		0	88	179	0.00		0.00	
SBL	1		1,600	137	149	0.09		0.09	*
SBT	2		3,200	650	547	0.20	*	0.17	
SBR	1	0	1,600	186	172	0.00		0.00	
EBL	1		1,600	72	102	0.05	*	0.06	
EBT	2		3,200	868	1,088	0.27		0.34	*
EBR	1	0	1,600	109	130	0.00		0.00	
WBL	1		1,600	120	126	0.08		0.08	*
WBT	2		3,200	1,339	970	0.42	*	0.30	
WBR	1	0	1,600	71	118	0.00		0.00	
N/S Critical Movements						0.27		0.40	
E/W Critical Movements						0.47		0.42	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.84		0.92	
Level of Service (LOS)						D		E	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	138	178	0.09	*	0.11	
NBT	2		3,200	495	928	0.19		0.35	*
NBR	0		0	102	207	0.00		0.00	
SBL	1		1,600	138	172	0.09		0.11	*
SBT	2		3,200	751	632	0.23	*	0.20	
SBR	1	0	1,600	248	184	0.00		0.00	
EBL	1		1,600	92	118	0.06	*	0.07	
EBT	2		3,200	1,003	1,257	0.31		0.39	*
EBR	1	0	1,600	126	150	0.00		0.00	
WBL	1		1,600	139	146	0.09		0.09	*
WBT	2		3,200	1,548	1,121	0.48	*	0.35	
WBR	1	0	1,600	82	136	0.00		0.00	
						0.32		0.46	
						0.54		0.48	
						0.00		0.00	
						0.10		0.10	
ICU						0.96		1.04	
Level of Service (LOS)						E		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	138	180	0.09	*	0.11	
NBT	2		3,200	495	928	0.19		0.35	*
NBR	0		0	102	207	0.00		0.00	
SBL	1		1,600	138	172	0.09		0.11	*
SBT	2		3,200	668	632	0.21	*	0.20	
SBR	1	0	1,600	242	187	0.00		0.00	
EBL	1		1,600	89	118	0.06	*	0.07	
EBT	2		3,200	1,003	1,257	0.31		0.39	*
EBR	1	0	1,600	126	150	0.00		0.00	
WBL	1		1,600	139	146	0.09		0.09	*
WBT	2		3,200	1,548	1,121	0.48	*	0.35	
WBR	1	0	1,600	82	136	0.00		0.00	
N/S Critical Movements						0.30		0.46	
E/W Critical Movements						0.54		0.48	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.94		1.04	
Level of Service (LOS)						E		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	138	180	0.09	*	0.11	
NBT	2		3,200	495	928	0.15		0.29	*
NBR	1	0	1,600	102	207	0.00		0.00	
SBL	1		1,600	138	172	0.09		0.11	*
SBT	2		3,200	668	632	0.21	*	0.20	
SBR	1	0	1,600	242	187	0.00		0.00	
EBL	1		1,600	89	118	0.06	*	0.07	
EBT	3		4,800	1,003	1,257	0.21		0.26	*
EBR	1	0	1,600	126	150	0.00		0.00	
WBL	1		1,600	139	146	0.09		0.09	*
WBT	3		4,800	1,548	1,121	0.32	*	0.23	
WBR	1	0	1,600	82	136	0.00		0.00	
						0.30		0.40	
						0.38		0.35	
						0.00		0.00	
						0.10		0.10	
ICU						0.78		0.85	
Level of Service (LOS)						C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 70
North/South Roadway: Paramount Boulevard
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	45	112	0.03		0.07	
NBT	2		3,200	178	592	0.06	*	0.19	*
NBR	1	0	1,600	86	157	0.00		0.00	
SBL	1		1,600	249	208	0.16	*	0.13	*
SBT	2		3,200	466	345	0.15		0.11	
SBR	1	0	1,600	220	164	0.00		0.00	
EBL	1		1,600	148	290	0.09	*	0.18	*
EBT	3		4,800	888	1,372	0.20		0.30	
EBR	0		0	57	59	0.00		0.00	
WBL	1		1,600	133	120	0.08		0.08	
WBT	3		4,800	976	934	0.23	*	0.26	*
WBR	0		0	105	302	0.00		0.00	
N/S Critical Movements						0.22		0.32	
E/W Critical Movements						0.32		0.44	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.64		0.86	
Level of Service (LOS)						B		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	60	119	0.04		0.07	
2		3,200	206	596	0.06	*	0.19	*
1	0	1,600	99	181	0.00		0.00	
1		1,600	288	240	0.18	*	0.15	*
2		3,200	539	399	0.17		0.12	
1	0	1,600	254	190	0.00		0.00	
1		1,600	171	335	0.11	*	0.21	*
3		4,800	1,026	1,586	0.23		0.35	
0		0	80	72	0.00		0.00	
1		1,600	154	140	0.10		0.09	
3		4,800	1,128	1,079	0.26	*	0.30	*
0		0	121	349	0.00		0.00	
					0.24		0.34	
					0.37		0.51	
					0.00		0.00	
					0.10		0.10	
ICU					0.71		0.95	
Level of Service (LOS)					C		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	68	116	0.04		0.07	
NBT	2		3,200	206	607	0.06	*	0.19	*
NBR	1	0	1,600	99	181	0.00		0.00	
SBL	1		1,600	288	240	0.18	*	0.15	*
SBT	2		3,200	470	399	0.15		0.12	
SBR	1	0	1,600	222	190	0.00		0.00	
EBL	1		1,600	171	335	0.11	*	0.21	*
EBT	3		4,800	1,026	1,586	0.23		0.35	
EBR	0		0	77	76	0.00		0.00	
WBL	1		1,600	154	137	0.10		0.09	
WBT	3		4,800	1,128	1,079	0.26	*	0.30	*
WBR	0		0	121	349	0.00		0.00	
N/S Critical Movements						0.24		0.34	
E/W Critical Movements						0.37		0.51	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.71		0.95	
Level of Service (LOS)						C		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	68	116	0.04		0.07	
2		3,200	206	607	0.06	*	0.19	*
1	0	1,600	99	181	0.00		0.00	
1		1,600	288	240	0.18	*	0.15	*
2		3,200	470	399	0.15		0.12	
1	0	1,600	222	190	0.00		0.00	
1		1,600	171	335	0.11	*	0.21	
3		4,800	1,026	1,586	0.23		0.35	*
0		0	77	76	0.00		0.00	
1		1,600	154	137	0.10		0.09	*
3		4,800	1,128	1,079	0.24	*	0.22	
1	0	1,600	121	349	0.00		0.00	
					0.24		0.34	
					0.35		0.44	
					0.00		0.00	
					0.10		0.10	
ICU					0.69		0.88	
Level of Service (LOS)					B		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 71
North/South Roadway: Downey Avenue
East/West Roadway: Aloandra Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	108	129	0.07 *	0.08
NBT	2	3,200	565	564	0.21	0.22 *
NBR	0	0	108	137	0.00	0.00
SBL	1	1,600	150	190	0.09	0.12 *
SBT	2	3,200	662	578	0.24 *	0.20
SBR	0	0	113	74	0.00	0.00
EBL	1	1,600	114	123	0.07 *	0.08
EBT	2	3,200	450	857	0.17	0.30 *
EBR	0	0	88	109	0.00	0.00
WBL	1	1,600	197	133	0.12	0.08 *
WBT	2	3,200	774	633	0.29 *	0.24
WBR	0	0	157	144	0.00	0.00
N/S Critical Movements					0.31	0.34
E/W Critical Movements					0.36	0.38
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.77	0.82
Level of Service (LOS)					C	D

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	125	149	0.08 *	0.09
2	3,200	653	652	0.24	0.25 *
0	0	125	158	0.00	0.00
1	1,600	173	194	0.11	0.12 *
2	3,200	765	668	0.28 *	0.23
0	0	131	80	0.00	0.00
1	1,600	121	142	0.08 *	0.09
2	3,200	520	990	0.19	0.35 *
0	0	91	126	0.00	0.00
1	1,600	228	154	0.14	0.10 *
2	3,200	895	732	0.34 *	0.28
0	0	181	166	0.00	0.00
				0.36	0.37
				0.42	0.45
				0.00	0.00
				0.10	0.10
ICU				0.88	0.92
Level of Service (LOS)				D	E

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	125	149	0.08 *	0.09
NBT	2	3,200	653	652	0.24	0.25 *
NBR	0	0	125	158	0.00	0.00
SBL	1	1,600	173	200	0.11	0.13 *
SBT	2	3,200	765	668	0.28 *	0.23
SBR	0	0	131	81	0.00	0.00
EBL	1	1,600	132	142	0.08 *	0.09
EBT	2	3,200	520	990	0.19	0.35 *
EBR	0	0	102	126	0.00	0.00
WBL	1	1,600	228	154	0.14	0.10 *
WBT	2	3,200	895	732	0.34 *	0.28
WBR	0	0	181	166	0.00	0.00
N/S Critical Movements					0.36	0.38
E/W Critical Movements					0.42	0.45
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.88	0.93
Level of Service (LOS)					D	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	125	149	0.08 *	0.09
2	3,200	653	652	0.24	0.25 *
0	0	125	158	0.00	0.00
1	1,600	173	200	0.11	0.13 *
2	3,200	765	668	0.28 *	0.23
0	0	131	81	0.00	0.00
1	1,600	132	142	0.08 *	0.09
2	3,200	520	990	0.16	0.31 *
1 0	1,600	102	126	0.00	0.00
1	1,600	228	154	0.14	0.10 *
2	3,200	895	732	0.34 *	0.28
0	0	181	166	0.00	0.00
				0.36	0.38
				0.42	0.41
				0.00	0.00
				0.10	0.10
ICU				0.88	0.89
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 72
North/South Roadway: Redonda Ave
East/West Roadway: Spring St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	544	564	0.19	*	0.20	*
NBT	1		800	3	0	0.00		0.00	
NBR	2	0	2,400	291	385	0.00		0.00	
SBL	1		1,600	6	6	0.00		0.00	
SBT	2		3,200	3	4	0.00	*	0.00	*
SBR	0		0	2	4	0.00		0.00	
EBL	1		1,600	4	10	0.00		0.01	
EBT	3		4,800	741	1,102	0.23	*	0.31	*
EBR	0		0	344	394	0.00		0.00	
WBL	2		2,880	319	241	0.11	*	0.08	*
WBT	3		4,800	1,316	908	0.28		0.19	
WBR	0		0	11	6	0.00		0.00	
N/S Critical Movements						0.19		0.20	
E/W Critical Movements						0.34		0.39	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.63		0.69	
Level of Service (LOS)						B		B	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	634	701	0.22	*	0.24	*
NBT	1		800	3	0	0.00		0.00	
NBR	2	0	2,400	336	401	0.00		0.00	
SBL	1		1,600	6	7	0.00		0.00	
SBT	2		3,200	3	5	0.00	*	0.00	*
SBR	0		0	2	4	0.00		0.00	
EBL	1		1,600	5	10	0.00		0.01	
EBT	3		4,800	856	1,274	0.25	*	0.36	*
EBR	0		0	365	458	0.00		0.00	
WBL	2		2,880	369	246	0.13	*	0.09	*
WBT	3		4,800	1,521	1,049	0.32		0.22	
WBR	0		0	13	6	0.00		0.00	
						0.22		0.24	
						0.38		0.45	
						0.00		0.00	
						0.10		0.10	
ICU						0.70		0.79	
Level of Service (LOS)						B		C	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	962	1,265	0.33	*	0.44	*
NBT	1		800	5	0	0.01		0.00	
NBR	2	0	2,400	341	636	0.00		0.00	
SBL	1		1,600	7	7	0.00		0.00	
SBT	2		3,200	6	7	0.00	*	0.00	*
SBR	0		0	2	5	0.00		0.00	
EBL	1		1,600	4	11	0.00		0.01	
EBT	3		4,800	856	1,274	0.36	*	0.42	*
EBR	0		0	857	758	0.00		0.00	
WBL	2		2,880	534	324	0.19	*	0.11	*
WBT	3		4,800	1,521	1,049	0.32		0.22	
WBR	0		0	13	7	0.00		0.00	
N/S Critical Movements						0.33		0.44	
E/W Critical Movements						0.55		0.53	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.98		1.07	
Level of Service (LOS)						E		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	962	1,265	0.33	*	0.44	*
1		800	5	0	0.01		0.00	
2	0	2,400	341	636	0.00		0.00	
1		1,600	7	7	0.00		0.00	
2		3,200	6	7	0.00	*	0.00	*
0		0	2	5	0.00		0.00	
1		1,600	4	11	0.00	*	0.01	
4		6,400	856	1,274	0.13		0.20	*
1	0	1,600	857	758	0.00		0.00	
2		2,880	534	324	0.19		0.11	*
3		4,800	1,521	1,049	0.32	*	0.22	
0		0	13	7	0.00		0.00	
					0.33		0.44	
					0.32		0.31	
					0.00		0.00	
					0.10		0.10	
ICU					0.75		0.85	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 73
North/South Roadway: Redondo Ave
East/West Roadway: Willow St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	258	213	0.09	0.07 *
NBT	3		4,800	944	592	0.20 *	0.12
NBR	1	0	1,600	473	415	0.00	0.00
SBL	2		2,880	110	276	0.04 *	0.10
SBT	3		4,800	364	651	0.09	0.16 *
SBR	0		0	49	126	0.00	0.00
EBL	1		1,600	120	70	0.08 *	0.04
EBT	3		4,800	1,036	1,545	0.22	0.32 *
EBR	1	0	1,600	162	290	0.00	0.00
WBL	2		2,880	199	251	0.07	0.09 *
WBT	3		4,800	1,343	1,046	0.28 *	0.22
WBR	1	0	1,600	280	124	0.00	0.00
N/S Critical Movements						0.24	0.23
E/W Critical Movements						0.36	0.41
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.70	0.74
Level of Service (LOS)						B	C

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	298	230	0.10	0.08 *
NBT	3		4,800	1,091	652	0.23 *	0.14
NBR	1	0	1,600	523	480	0.00	0.00
SBL	2		2,880	127	319	0.04 *	0.11
SBT	3		4,800	421	752	0.10	0.19 *
SBR	0		0	57	142	0.00	0.00
EBL	1		1,600	139	79	0.09 *	0.05
EBT	3		4,800	1,197	1,786	0.25	0.37 *
EBR	1	0	1,600	170	335	0.00	0.00
WBL	2		2,880	249	290	0.09	0.10 *
WBT	3		4,800	1,552	1,088	0.32 *	0.23
WBR	1	0	1,600	281	131	0.00	0.00
						0.27	0.27
						0.41	0.47
						0.00	0.00
						0.10	0.10
ICU						0.78	0.84
Level of Service (LOS)						C	D

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	298	214	0.10	0.07
NBT	3		4,800	1,122	790	0.23 *	0.16 *
NBR	1	0	1,600	547	480	0.00	0.00
SBL	2		2,880	118	298	0.04 *	0.10 *
SBT	3		4,800	424	710	0.10	0.18
SBR	0		0	57	173	0.00	0.00
EBL	1		1,600	134	109	0.08 *	0.07
EBT	3		4,800	1,197	1,786	0.25	0.37 *
EBR	1	0	1,600	187	335	0.00	0.00
WBL	2		2,880	214	290	0.07	0.10 *
WBT	3		4,800	1,552	1,209	0.32 *	0.25
WBR	1	0	1,600	344	159	0.00	0.00
N/S Critical Movements						0.27	0.26
E/W Critical Movements						0.40	0.47
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.77	0.83
Level of Service (LOS)						C	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	298	214	0.10	0.07
NBT	3		4,800	1,122	790	0.23 *	0.16 *
NBR	1	0	1,600	547	480	0.00	0.00
SBL	2		2,880	118	298	0.04 *	0.10 *
SBT	3		4,800	424	710	0.10	0.18
SBR	0		0	57	173	0.00	0.00
EBL	1		1,600	134	109	0.08 *	0.07
EBT	3		4,800	1,197	1,786	0.25	0.37 *
EBR	1	0	1,600	187	335	0.00	0.00
WBL	2		2,880	214	290	0.07	0.10 *
WBT	3		4,800	1,552	1,209	0.32 *	0.25
WBR	1	0	1,600	344	159	0.00	0.00
						0.27	0.26
						0.40	0.47
						0.00	0.00
						0.10	0.10
ICU						0.77	0.83
Level of Service (LOS)						C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 74
North/South Roadway: Redondo Ave
East/West Roadway: Pacific Coast Hwy
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	130	142	0.08		0.09	
NBT	2		3,200	973	716	0.38	*	0.32	*
NBR	0		0	239	295	0.00		0.00	
SBL	1		1,600	90	172	0.06	*	0.11	*
SBT	2		3,200	433	826	0.14		0.26	
SBR	1	0	1,600	153	199	0.00		0.00	
EBL	1		1,600	225	215	0.14	*	0.13	
EBT	3		4,800	1,048	1,265	0.22		0.27	*
EBR	0		0	11	18	0.00		0.00	
WBL	1		1,600	235	289	0.15		0.18	*
WBT	3		4,800	1,339	1,200	0.29	*	0.26	
WBR	0		0	63	43	0.00		0.00	
N/S Critical Movements						0.44		0.43	
E/W Critical Movements						0.43		0.45	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.97		0.98	
Level of Service (LOS)						E		E	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	150	164	0.09		0.10	
2		3,200	1,125	828	0.43	*	0.36	*
0		0	258	315	0.00		0.00	
1		1,600	92	199	0.06	*	0.12	*
2		3,200	500	955	0.16		0.30	
1	0	1,600	177	230	0.00		0.00	
1		1,600	260	248	0.16	*	0.16	
3		4,800	1,211	1,462	0.25		0.31	*
0		0	13	21	0.00		0.00	
1		1,600	272	312	0.17		0.20	*
3		4,800	1,548	1,387	0.34	*	0.30	
0		0	73	50	0.00		0.00	
					0.49		0.48	
					0.50		0.51	
					0.00		0.00	
					0.10		0.10	
ICU					1.09		1.09	
Level of Service (LOS)					F		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	150	164	0.09		0.10	
NBT	2		3,200	995	828	0.40	*	0.35	*
NBR	0		0	276	298	0.00		0.00	
SBL	1		1,600	92	199	0.06	*	0.12	*
SBT	2		3,200	500	955	0.16		0.30	
SBR	1	0	1,600	177	230	0.00		0.00	
EBL	1		1,600	260	248	0.16	*	0.16	
EBT	3		4,800	1,211	1,462	0.25		0.31	*
EBR	0		0	13	21	0.00		0.00	
WBL	1		1,600	272	294	0.17		0.18	*
WBT	3		4,800	1,548	1,387	0.34	*	0.30	
WBR	0		0	66	50	0.00		0.00	
N/S Critical Movements						0.46		0.47	
E/W Critical Movements						0.50		0.49	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.06		1.06	
Level of Service (LOS)						F		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	150	164	0.09		0.10	
2		3,200	995	828	0.31	*	0.26	*
1	0	1,600	276	298	0.00		0.00	
1		1,600	92	199	0.06	*	0.12	*
3		4,800	500	955	0.14		0.25	
0		0	177	230	0.00		0.00	
1		1,600	260	248	0.16	*	0.16	
4		6,400	1,211	1,462	0.19		0.23	*
0		0	13	21	0.00		0.00	
1		1,600	272	294	0.17		0.18	*
4		6,400	1,548	1,387	0.25	*	0.22	
0		0	66	50	0.00		0.00	
					0.37		0.38	
					0.41		0.41	
					0.00		0.00	
					0.10		0.10	
ICU					0.88		0.89	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 75
North/South Roadway: Redondo Avenue
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	56	70	0.04	0.04 *
NBT	2	3,200	1,011	852	0.34 *	0.30
NBR	0	0	73	111	0.00	0.00
SBL	1	1,600	49	68	0.03 *	0.04
SBT	2	3,200	569	963	0.20	0.32 *
SBR	0	0	85	76	0.00	0.00
EBL	1	1,600	165	155	0.10 *	0.10
EBT	2	3,200	982	1,062	0.34	0.37 *
EBR	0	0	101	121	0.00	0.00
WBL	1	1,600	91	173	0.06	0.11 *
WBT	2	3,200	871	958	0.30 *	0.32
WBR	0	0	79	80	0.00	0.00
N/S Critical Movements					0.37	0.36
E/W Critical Movements					0.40	0.48
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.87	0.94
Level of Service (LOS)					D	E

2040 NO BUILD

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	65	81	0.04	0.05 *
NBT	2	3,200	1,168	985	0.39 *	0.35
NBR	0	0	84	128	0.00	0.00
SBL	1	1,600	57	79	0.04 *	0.05
SBT	2	3,200	658	1,113	0.23	0.38 *
SBR	0	0	88	88	0.00	0.00
EBL	1	1,600	178	179	0.11	0.11
EBT	2	3,200	1,135	1,227	0.39 *	0.43 *
EBR	0	0	117	140	0.00	0.00
WBL	1	1,600	105	200	0.07 *	0.12 *
WBT	2	3,200	1,007	1,107	0.34	0.37
WBR	0	0	79	92	0.00	0.00
					0.43	0.43
					0.46	0.55
					0.00	0.00
					0.10	0.10
ICU					0.99	1.08
Level of Service (LOS)					E	F

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	65	81	0.04	0.05 *
NBT	2	3,200	1,168	985	0.39 *	0.35
NBR	0	0	84	128	0.00	0.00
SBL	1	1,600	57	79	0.04 *	0.05
SBT	2	3,200	658	1,113	0.23	0.38 *
SBR	0	0	92	88	0.00	0.00
EBL	1	1,600	184	179	0.12	0.11
EBT	2	3,200	1,135	1,227	0.39 *	0.42 *
EBR	0	0	117	123	0.00	0.00
WBL	1	1,600	105	200	0.07 *	0.12 *
WBT	2	3,200	880	1,107	0.30	0.37
WBR	0	0	81	92	0.00	0.00
N/S Critical Movements					0.43	0.43
E/W Critical Movements					0.46	0.54
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.99	1.07
Level of Service (LOS)					E	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	65	81	0.04	0.05 *
NBT	3	4,800	1,168	985	0.26 *	0.23
NBR	0	0	84	128	0.00	0.00
SBL	1	1,600	57	79	0.04 *	0.05
SBT	3	4,800	658	1,113	0.21	0.23 *
SBR	1 0	1,600	92	88	0.00	0.00
EBL	1	1,600	184	179	0.12 *	0.11
EBT	2	3,200	1,135	1,227	0.35	0.38 *
EBR	1 0	1,600	117	123	0.00	0.00
WBL	1	1,600	105	200	0.07	0.12 *
WBT	2	3,200	880	1,107	0.30 *	0.37
WBR	0	0	81	92	0.00	0.00
					0.30	0.28
					0.42	0.50
					0.00	0.00
					0.10	0.10
ICU					0.82	0.88
Level of Service (LOS)					D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 76
North/South Roadway: Redondo Avenue
East/West Roadway: 7th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	53	50	0.03	0.03 *
NBT	2	3,200	820	738	0.31 *	0.28
NBR	0	0	174	157	0.00	0.00
SBL	1	1,600	65	65	0.04 *	0.04
SBT	2	3,200	558	874	0.22	0.32 *
SBR	0	0	130	142	0.00	0.00
EBL	1	1,600	164	190	0.10 *	0.12 *
EBT	2	3,200	1,151	1,096	0.38	0.36
EBR	0	0	50	64	0.00	0.00
WBL	1	1,600	119	156	0.07	0.10
WBT	2	3,200	1,267	1,016	0.42 *	0.34 *
WBR	0	0	70	65	0.00	0.00
N/S Critical Movements					0.35	0.35
E/W Critical Movements					0.52	0.46
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.97	0.91
Level of Service (LOS)					E	E

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	57	58	0.04	0.04 *
2	3,200	948	853	0.35 *	0.32
0	0	174	181	0.00	0.00
1	1,600	75	75	0.05 *	0.05
2	3,200	645	1,010	0.24	0.37 *
0	0	134	164	0.00	0.00
1	1,600	190	220	0.12 *	0.14 *
2	3,200	1,330	1,267	0.43	0.42
0	0	58	74	0.00	0.00
1	1,600	138	180	0.09	0.11
2	3,200	1,464	1,174	0.48 *	0.39 *
0	0	81	75	0.00	0.00
				0.40	0.41
				0.60	0.53
				0.00	0.00
				0.10	0.10
ICU				1.10	1.04
Level of Service (LOS)				F	F

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	69	58	0.04	0.04 *
NBT	2	3,200	820	853	0.31 *	0.32
NBR	0	0	184	181	0.00	0.00
SBL	1	1,600	75	75	0.05 *	0.05
SBT	2	3,200	645	1,010	0.25	0.37 *
SBR	0	0	150	164	0.00	0.00
EBL	1	1,600	190	220	0.12 *	0.14 *
EBT	2	3,200	1,330	1,267	0.43	0.42
EBR	0	0	55	74	0.00	0.00
WBL	1	1,600	138	180	0.09	0.11
WBT	2	3,200	1,283	1,174	0.43 *	0.39 *
WBR	0	0	81	75	0.00	0.00
N/S Critical Movements					0.36	0.41
E/W Critical Movements					0.55	0.53
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					1.01	1.04
Level of Service (LOS)					F	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	69	58	0.04	0.04 *
2	3,200	820	853	0.31 *	0.32
0	0	184	181	0.00	0.00
1	1,600	75	75	0.05 *	0.05
2	3,200	645	1,010	0.25	0.37 *
0	0	150	164	0.00	0.00
1	1,600	190	220	0.12 *	0.14 *
3	4,800	1,330	1,267	0.28	0.26
1 0	1,600	55	74	0.00	0.00
1	1,600	138	180	0.09	0.11
3	4,800	1,283	1,174	0.27 *	0.24 *
1 0	1,600	81	75	0.00	0.00
				0.36	0.41
				0.39	0.38
				0.00	0.00
				0.10	0.10
ICU				0.85	0.89
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 77
North/South Roadway: Redondo Avenue
East/West Roadway: 3rd Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	21	29	0.01	0.02 *
NBT	2	3,200	565	582	0.18 *	0.18
NBR	0	0	13	8	0.00	0.00
SBL	1	1,600	39	53	0.02 *	0.03
SBT	2	3,200	434	656	0.16	0.24 *
SBR	0	0	91	105	0.00	0.00
EBL	0	0	142	92	0.09 *	0.06 *
EBT	1	1,600	83	108	0.16	0.14
EBR	0	0	37	23	0.00	0.00
WBL	0	0	8	14	0.01	0.01
WBT	1	1,600	81	98	0.09 *	0.10 *
WBR	0	0	51	55	0.00	0.00
N/S Critical Movements					0.20	0.26
E/W Critical Movements					0.18	0.16
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.48	0.52
Level of Service (LOS)					A	A

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	24	29	0.02	0.02 *
2	3,200	653	673	0.21 *	0.21
0	0	14	9	0.00	0.00
1	1,600	45	61	0.03 *	0.04
2	3,200	502	758	0.19	0.27 *
0	0	105	121	0.00	0.00
0	0	164	106	0.10 *	0.07 *
1	1,600	83	125	0.18	0.16
0	0	38	27	0.00	0.00
0	0	9	16	0.01	0.01
1	1,600	94	112	0.10 *	0.12 *
0	0	52	64	0.00	0.00
				0.24	0.29
				0.20	0.19
				0.00	0.00
				0.10	0.10
ICU				0.54	0.58
Level of Service (LOS)				A	A

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	24	29	0.02	0.02 *
NBT	2	3,200	653	673	0.21 *	0.21
NBR	0	0	14	9	0.00	0.00
SBL	1	1,600	45	61	0.03 *	0.04
SBT	2	3,200	502	671	0.19	0.25 *
SBR	0	0	105	113	0.00	0.00
EBL	0	0	164	106	0.10 *	0.07 *
EBT	1	1,600	83	125	0.18	0.16
EBR	0	0	38	27	0.00	0.00
WBL	0	0	8	14	0.01	0.01
WBT	1	1,600	94	105	0.10 *	0.11 *
WBR	0	0	59	60	0.00	0.00
N/S Critical Movements					0.24	0.27
E/W Critical Movements					0.20	0.18
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.54	0.55
Level of Service (LOS)					A	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	24	29	0.02	0.02 *
2	3,200	653	673	0.21 *	0.21
0	0	14	9	0.00	0.00
1	1,600	45	61	0.03 *	0.04
2	3,200	502	671	0.19	0.25 *
0	0	105	113	0.00	0.00
0	0	164	106	0.10 *	0.07 *
1	1,600	83	125	0.18	0.16
0	0	38	27	0.00	0.00
0	0	8	14	0.01	0.01
1	1,600	94	105	0.10 *	0.11 *
0	0	59	60	0.00	0.00
				0.24	0.27
				0.20	0.18
				0.00	0.00
				0.10	0.10
ICU				0.54	0.55
Level of Service (LOS)				A	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 78
North/South Roadway: Redondo Avenue
East/West Roadway: Ocean Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	0	0	0	0	0.00 *	0.00 *
NBR	0	0	0	0	0.00	0.00
SBL	1	1,600	108	209	0.07 *	0.13 *
SBT	0	0	0	0	0.00	0.00
SBR	1 0	1,600	82	91	0.00	0.00
EBL	1	1,600	61	117	0.04 *	0.07
EBT	2	3,200	706	1,431	0.22	0.45 *
EBR	0	0	0	0	0.00	0.00
WBL	0	0	0	0	0.00	0.00 *
WBT	2	3,200	1,056	780	0.37 *	0.28
WBR	0	0	116	106	0.00	0.00
N/S Critical Movements					0.07	0.13
E/W Critical Movements					0.41	0.45
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.58	0.68
Level of Service (LOS)					A	B

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	0	0	0	0	0.00 *	0.00 *
NBR	0	0	0	0	0.00	0.00
SBL	1	1,600	113	242	0.07 *	0.15 *
SBT	0	0	0	0	0.00	0.00
SBR	1 0	1,600	121	104	0.00	0.00
EBL	1	1,600	80	121	0.05 *	0.08
EBT	2	3,200	716	1,654	0.22	0.52 *
EBR	0	0	0	0	0.00	0.00
WBL	0	0	0	0	0.00	0.00 *
WBT	2	3,200	1,068	822	0.38 *	0.30
WBR	0	0	134	123	0.00	0.00
					0.07	0.15
					0.43	0.52
					0.00	0.00
					0.10	0.10
ICU					0.60	0.77
Level of Service (LOS)					A	C

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	0	0	0	0	0.00 *	0.00 *
NBR	0	0	0	0	0.00	0.00
SBL	1	1,600	125	213	0.08 *	0.13 *
SBT	0	0	0	0	0.00	0.00
SBR	1 0	1,600	118	110	0.00	0.00
EBL	1	1,600	82	121	0.05 *	0.08
EBT	2	3,200	816	1,437	0.25	0.45 *
EBR	0	0	0	0	0.00	0.00
WBL	0	0	0	0	0.00	0.00 *
WBT	2	3,200	1,080	815	0.38 *	0.29
WBR	0	0	134	123	0.00	0.00
N/S Critical Movements					0.08	0.13
E/W Critical Movements					0.43	0.45
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.61	0.68
Level of Service (LOS)					B	B

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
0	0	0	0	0.00	0.00
0	0	0	0	0.00 *	0.00 *
0	0	0	0	0.00	0.00
1	1,600	125	213	0.08 *	0.13 *
0	0	0	0	0.00	0.00
1 0	1,600	118	110	0.00	0.00
1	1,600	82	121	0.05 *	0.08
2	3,200	816	1,437	0.25	0.45 *
0	0	0	0	0.00	0.00
0	0	0	0	0.00	0.00 *
2	3,200	1,080	815	0.38 *	0.29
0	0	134	123	0.00	0.00
				0.08	0.13
				0.43	0.45
				0.00	0.00
				0.10	0.10
ICU				0.61	0.68
Level of Service (LOS)				B	B

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 79
North/South Roadway: Lakewood Boulevard
East/West Roadway: Del Amo Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	175	283	0.11	*	0.18	
NBT	3		4,800	555	1,088	0.13		0.28	*
NBR	0		0	86	264	0.00		0.00	
SBL	1		1,600	196	248	0.12		0.16	*
SBT	2		3,200	931	697	0.29	*	0.22	
SBR	1	0	1,600	131	180	0.00		0.00	
EBL	1		1,600	118	221	0.07	*	0.14	*
EBT	3		4,800	864	1,103	0.22		0.26	
EBR	0		0	214	147	0.00		0.00	
WBL	1		1,600	176	231	0.11		0.14	
WBT	2		3,200	1,020	938	0.32	*	0.29	*
WBR	1	0	1,600	208	300	0.00		0.00	
N/S Critical Movements						0.40		0.44	
E/W Critical Movements						0.39		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.89		0.97	
Level of Service (LOS)						D		E	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	202	327	0.13	*	0.20	
3		4,800	641	1,257	0.15		0.33	*
0		0	99	305	0.00		0.00	
1		1,600	227	287	0.14		0.18	*
2		3,200	1,076	806	0.34	*	0.25	
1	0	1,600	151	208	0.00		0.00	
1		1,600	136	226	0.09	*	0.14	*
3		4,800	999	1,275	0.25		0.30	
0		0	214	157	0.00		0.00	
1		1,600	203	267	0.13		0.17	
2		3,200	1,179	1,084	0.37	*	0.34	*
1	0	1,600	240	347	0.00		0.00	
					0.47		0.51	
					0.46		0.48	
					0.00		0.00	
					0.10		0.10	
ICU					1.03		1.09	
Level of Service (LOS)					F		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	202	327	0.13	*	0.20	
NBT	3		4,800	641	1,257	0.15		0.33	*
NBR	0		0	99	305	0.00		0.00	
SBL	1		1,600	227	287	0.14		0.18	*
SBT	2		3,200	945	806	0.30	*	0.25	
SBR	1	0	1,600	151	208	0.00		0.00	
EBL	1		1,600	136	229	0.09	*	0.14	*
EBT	3		4,800	999	1,275	0.25		0.30	
EBR	0		0	223	160	0.00		0.00	
WBL	1		1,600	179	267	0.11		0.17	
WBT	2		3,200	1,179	1,084	0.37	*	0.34	*
WBR	1	0	1,600	240	347	0.00		0.00	
N/S Critical Movements						0.43		0.51	
E/W Critical Movements						0.46		0.48	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.99		1.09	
Level of Service (LOS)						E		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	202	327	0.07	*	0.11	*
3		4,800	641	1,257	0.13		0.26	
1	0	1,600	99	305	0.00		0.00	
2		2,880	227	287	0.08		0.10	
3		4,800	945	806	0.30	*	0.25	*
1	0	1,600	151	208	0.00		0.00	
1		1,600	136	229	0.09	*	0.14	*
4		6,400	999	1,275	0.19		0.22	
0		0	223	160	0.00		0.00	
1		1,600	179	267	0.11		0.17	
3		4,800	1,179	1,084	0.30	*	0.30	*
0		0	240	347	0.00		0.00	
					0.37		0.36	
					0.39		0.44	
					0.00		0.00	
					0.10		0.10	
ICU					0.86		0.90	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 80
North/South Roadway: Lakewood Boulevard
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	294	327	0.10	*	0.11	
NBT	3		4,800	641	1,352	0.13		0.28	*
NBR	1	0	1,600	209	374	0.00		0.00	
SBL	1		1,600	108	102	0.07		0.06	*
SBT	4		6,400	1,173	838	0.21	*	0.15	
SBR	0		0	153	107	0.00		0.00	
EBL	2		2,880	86	278	0.03	*	0.10	
EBT	3		4,800	687	1,191	0.14		0.25	*
EBR	1	0	1,600	247	287	0.00		0.00	
WBL	2		2,880	227	221	0.08		0.08	*
WBT	3		4,800	886	706	0.19	*	0.16	
WBR	0		0	30	71	0.00		0.00	
N/S Critical Movements						0.31		0.34	
E/W Critical Movements						0.22		0.33	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.63		0.77	
Level of Service (LOS)						B		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	340	365	0.12	*	0.13	
NBT	3		4,800	741	1,563	0.15		0.33	*
NBR	1	0	1,600	242	432	0.00		0.00	
SBL	1		1,600	121	118	0.08		0.07	*
SBT	4		6,400	1,356	969	0.24	*	0.17	
SBR	0		0	177	124	0.00		0.00	
EBL	2		2,880	99	321	0.03		0.11	
EBT	3		4,800	794	1,377	0.17	*	0.29	*
EBR	1	0	1,600	285	296	0.00		0.00	
WBL	2		2,880	262	255	0.09	*	0.09	*
WBT	3		4,800	1,024	816	0.22		0.19	
WBR	0		0	35	82	0.00		0.00	
						0.36		0.40	
						0.26		0.38	
						0.00		0.00	
						0.10		0.10	
ICU						0.72		0.88	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	340	378	0.12	*	0.13	
NBT	3		4,800	741	1,369	0.15		0.29	*
NBR	1	0	1,600	242	432	0.00		0.00	
SBL	1		1,600	139	118	0.09		0.07	*
SBT	4		6,400	1,246	969	0.22	*	0.17	
SBR	0		0	177	124	0.00		0.00	
EBL	2		2,880	99	321	0.03		0.11	
EBT	3		4,800	794	1,377	0.17	*	0.29	*
EBR	1	0	1,600	285	332	0.00		0.00	
WBL	2		2,880	262	255	0.09	*	0.09	*
WBT	3		4,800	1,024	816	0.22		0.19	
WBR	0		0	33	82	0.00		0.00	
N/S Critical Movements						0.34		0.36	
E/W Critical Movements						0.26		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.70		0.84	
Level of Service (LOS)						B		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	340	378	0.12	*	0.13	
NBT	3		4,800	741	1,369	0.15		0.29	*
NBR	1	0	1,600	242	432	0.00		0.00	
SBL	1		1,600	139	118	0.09		0.07	*
SBT	4		6,400	1,246	969	0.22	*	0.17	
SBR	0		0	177	124	0.00		0.00	
EBL	2		2,880	99	321	0.03		0.11	
EBT	3		4,800	794	1,377	0.17	*	0.29	*
EBR	1	0	1,600	285	332	0.00		0.00	
WBL	2		2,880	262	255	0.09	*	0.09	*
WBT	3		4,800	1,024	816	0.22		0.19	
WBR	0		0	33	82	0.00		0.00	
						0.34		0.36	
						0.26		0.38	
						0.00		0.00	
						0.10		0.10	
ICU						0.70		0.84	
Level of Service (LOS)						B		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 81
North/South Roadway: Lakewood Boulevard
East/West Roadway: Spring Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	148	47	0.05	*	0.02	*
NBT	4		6,400	1,277	1,480	0.20		0.23	
NBR	1	0	1,600	275	204	0.00		0.00	
SBL	2		2,880	249	258	0.09		0.09	
SBT	3		4,800	1,304	1,586	0.27	*	0.33	*
SBR	2	0	3,200	571	406	0.00		0.00	
EBL	2		2,880	312	672	0.11	*	0.23	
EBT	3		4,800	416	1,277	0.09		0.27	*
EBR	2	0	3,200	22	182	0.00		0.00	
WBL	2		2,880	208	246	0.07		0.09	*
WBT	3		4,800	1,377	529	0.29	*	0.11	
WBR	1	0	1,600	200	271	0.00		0.00	
N/S Critical Movements						0.32		0.35	
E/W Critical Movements						0.40		0.36	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.82		0.81	
Level of Service (LOS)						D		D	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	171	50	0.06	*	0.02	*
NBT	4		6,400	1,476	1,711	0.23		0.27	
NBR	1	0	1,600	318	236	0.00		0.00	
SBL	2		2,880	288	298	0.10		0.10	
SBT	3		4,800	1,507	1,833	0.31	*	0.38	*
SBR	2	0	3,200	660	412	0.00		0.00	
EBL	2		2,880	361	692	0.13	*	0.24	
EBT	3		4,800	418	1,476	0.09		0.31	*
EBR	2	0	3,200	25	203	0.00		0.00	
WBL	2		2,880	240	284	0.08		0.10	*
WBT	3		4,800	1,591	556	0.33	*	0.12	
WBR	1	0	1,600	231	313	0.00		0.00	
						0.37		0.40	
						0.46		0.41	
						0.00		0.00	
						0.10		0.10	
ICU						0.93		0.91	
Level of Service (LOS)						E		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	239	63	0.08	*	0.02	*
NBT	4		6,400	1,476	1,711	0.23		0.27	
NBR	1	0	1,600	318	236	0.00		0.00	
SBL	2		2,880	288	298	0.10		0.10	
SBT	3		4,800	1,507	1,833	0.31	*	0.38	*
SBR	2	0	3,200	888	514	0.00		0.00	
EBL	2		2,880	333	1,050	0.12	*	0.36	*
EBT	3		4,800	481	1,438	0.10		0.30	
EBR	2	0	3,200	26	302	0.00		0.00	
WBL	2		2,880	240	284	0.08		0.10	
WBT	3		4,800	1,604	543	0.33	*	0.11	*
WBR	1	0	1,600	231	313	0.00		0.00	
N/S Critical Movements						0.39		0.40	
E/W Critical Movements						0.45		0.47	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.94		0.97	
Level of Service (LOS)						E		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	239	63	0.08	*	0.02	
NBT	4		6,400	1,476	1,711	0.23		0.27	*
NBR	1	0	1,600	318	236	0.00		0.00	
SBL	3		4,800	288	298	0.06		0.06	*
SBT	4		6,400	1,507	1,833	0.24	*	0.29	
SBR	2	0	3,200	888	514	0.00		0.00	
EBL	2		2,880	333	1,050	0.12	*	0.36	*
EBT	3		4,800	481	1,438	0.10		0.30	
EBR	2	0	3,200	26	302	0.00		0.00	
WBL	2		2,880	240	284	0.08		0.10	
WBT	3		4,800	1,604	543	0.33	*	0.11	*
WBR	1	0	1,600	231	313	0.00		0.00	
						0.32		0.33	
						0.45		0.47	
						0.00		0.00	
						0.10		0.10	
ICU						0.87		0.90	
Level of Service (LOS)						D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 82
North/South Roadway: Lakewood Boulevard
East/West Roadway: I-405 WB Ramps
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00 *
NBT	3		4,000	1,236	1,390	0.31 *	0.35
NBR	2	0	2,400	949	644	0.00	0.00
SBL	0		0	0	0	0.00 *	0.00
SBT	3		4,000	1,009	1,421	0.25	0.36 *
SBR	2	0	2,400	468	528	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00 *
EBT	0		0	0	0	0.00	0.00
EBR	0		0	221	277	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	0		0	0	0	0.00 *	0.00 *
WBR	1	0	1,600	475	441	0.00	0.00
N/S Critical Movements						0.31	0.36
E/W Critical Movements						0.00	0.00
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.41	0.46
Level of Service (LOS)						A	A

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00 *
NBT	3		4,000	1,429	1,607	0.36 *	0.40
NBR	2	0	2,400	1,097	744	0.00	0.00
SBL	0		0	0	0	0.00 *	0.00
SBT	3		4,000	1,009	1,642	0.25	0.41 *
SBR	2	0	2,400	541	610	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00 *
EBT	0		0	0	0	0.00	0.00
EBR	0		0	241	293	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	0		0	0	0	0.00 *	0.00 *
WBR	1	0	1,600	549	510	0.00	0.00
						0.36	0.41
						0.00	0.00
						0.00	0.00
						0.10	0.10
ICU						0.46	0.51
Level of Service (LOS)						A	A

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00
NBT	3		4,000	1,429	1,607	0.36 *	0.40 *
NBR	2	0	2,400	1,097	744	0.00	0.00
SBL	0		0	0	0	0.00 *	0.00 *
SBT	3		4,000	1,039	1,465	0.26	0.37
SBR	2	0	2,400	541	610	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00 *
EBT	0		0	0	0	0.00	0.00
EBR	0		0	240	303	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	0		0	0	0	0.00 *	0.00 *
WBR	1	0	1,600	480	510	0.00	0.00
N/S Critical Movements						0.36	0.40
E/W Critical Movements						0.00	0.00
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.46	0.50
Level of Service (LOS)						A	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00
NBT	3		4,000	1,429	1,607	0.36 *	0.40 *
NBR	2	0	2,400	1,097	744	0.00	0.00
SBL	0		0	0	0	0.00 *	0.00 *
SBT	3		4,000	1,039	1,465	0.26	0.37
SBR	2	0	2,400	541	610	0.00	0.00
EBL	0		0	0	0	0.00 *	0.00 *
EBT	0		0	0	0	0.00	0.00
EBR	0		0	240	303	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	0		0	0	0	0.00 *	0.00 *
WBR	1	0	1,600	480	510	0.00	0.00
						0.36	0.40
						0.00	0.00
						0.00	0.00
						0.10	0.10
ICU						0.46	0.50
Level of Service (LOS)						A	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 83
North/South Roadway: Lakewood Boulevard
East/West Roadway: I-405 EB Ramps with Lakewood Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	4		6,400	2,176	2,023	0.34	*	0.32	*
NBR	0		0	12	20	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	*
SBT	3		4,000	919	1,204	0.23		0.30	
SBR	2	0	2,400	311	494	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	1	0	1,600	781	620	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	1		1,600	0	0	0.01	*	0.01	*
WBR	0		0	9	11	0.00		0.00	
N/S Critical Movements						0.34		0.32	
E/W Critical Movements						0.01		0.01	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.45		0.43	
Level of Service (LOS)						A		A	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	4		6,400	2,515	2,338	0.39	*	0.37	*
NBR	0		0	12	20	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	*
SBT	3		4,000	972	1,392	0.24		0.35	
SBR	2	0	2,400	359	571	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	1	0	1,600	903	717	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	1		1,600	0	0	0.01	*	0.01	*
WBR	0		0	9	11	0.00		0.00	
						0.39		0.37	
						0.01		0.01	
						0.00		0.00	
						0.10		0.10	
ICU						0.50		0.48	
Level of Service (LOS)						A		A	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	4		6,400	2,515	2,038	0.39	*	0.32	*
NBR	0		0	12	20	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	*
SBT	3		4,000	1,000	1,255	0.25		0.31	
SBR	2	0	2,400	359	513	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	1	0	1,600	831	717	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	1		1,600	0	0	0.01	*	0.01	*
WBR	0		0	9	11	0.00		0.00	
N/S Critical Movements						0.39		0.32	
E/W Critical Movements						0.01		0.01	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.50		0.43	
Level of Service (LOS)						A		A	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	4		6,400	2,515	2,038	0.39	*	0.32	*
NBR	0		0	12	20	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	*
SBT	3		4,000	1,000	1,255	0.25		0.31	
SBR	2	0	2,400	359	513	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	0		0	0	0	0.00		0.00	
EBR	1	0	1,600	831	717	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	1		1,600	0	0	0.01	*	0.01	*
WBR	0		0	9	11	0.00		0.00	
						0.39		0.32	
						0.01		0.01	
						0.00		0.00	
						0.10		0.10	
ICU						0.50		0.43	
Level of Service (LOS)						A		A	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 84
North/South Roadway: Lakewood Blvd
East/West Roadway: Willow St
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	239	194	0.08 *	0.07 *
NBT	4	6,400	1,325	1,231	0.24	0.22
NBR	0	0	183	159	0.00	0.00
SBL	2	2,880	131	112	0.05	0.04
SBT	3	4,800	1,135	1,432	0.33 *	0.36 *
SBR	0	0	434	280	0.00	0.00
EBL	2	2,880	156	299	0.05 *	0.10
EBT	3	4,800	1,050	1,728	0.22	0.36 *
EBR	1 0	1,600	146	298	0.00	0.00
WBL	2	2,880	89	167	0.03	0.06 *
WBT	2.5	4,000	1,467	954	0.37 *	0.24
WBR	1.5 0	2,400	707	514	0.00	0.00
N/S Critical Movements					0.41	0.43
E/W Critical Movements					0.42	0.42
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.93	0.95
Level of Service (LOS)					E	E

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	276	212	0.10 *	0.07 *
NBT	4	6,400	1,531	1,423	0.27	0.25
NBR	0	0	212	184	0.00	0.00
SBL	2	2,880	151	129	0.05	0.04
SBT	3	4,800	1,312	1,655	0.36 *	0.41 *
SBR	0	0	438	324	0.00	0.00
EBL	2	2,880	163	346	0.06 *	0.12
EBT	3	4,800	1,214	1,997	0.25	0.42 *
EBR	1 0	1,600	169	326	0.00	0.00
WBL	2	2,880	103	185	0.04	0.06 *
WBT	2.5	4,000	1,695	971	0.42 *	0.24
WBR	1.5 0	2,400	817	594	0.00	0.00
					0.46	0.48
					0.48	0.48
					0.00	0.00
					0.10	0.10
ICU					1.04	1.06
Level of Service (LOS)					F	F

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	261	223	0.09 *	0.08 *
NBT	4	6,400	1,328	1,244	0.24	0.22
NBR	0	0	212	184	0.00	0.00
SBL	2	2,880	151	129	0.05	0.04
SBT	3	4,800	1,312	1,655	0.39 *	0.41 *
SBR	0	0	572	298	0.00	0.00
EBL	2	2,880	176	356	0.06 *	0.12
EBT	3	4,800	1,214	1,729	0.25	0.36 *
EBR	1 0	1,600	169	368	0.00	0.00
WBL	2	2,880	103	193	0.04	0.07 *
WBT	2.5	4,000	1,539	969	0.38 *	0.24
WBR	1.5 0	2,400	817	594	0.00	0.00
N/S Critical Movements					0.48	0.49
E/W Critical Movements					0.44	0.43
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					1.02	1.02
Level of Service (LOS)					F	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2	2,880	261	223	0.09 *	0.08 *
NBT	4	6,400	1,328	1,244	0.24	0.22
NBR	0	0	212	184	0.00	0.00
SBL	2	2,880	151	129	0.05	0.04
SBT	3	4,800	1,312	1,655	0.27 *	0.34 *
SBR	1 0	1,600	572	298	0.00	0.00
EBL	2	2,880	176	356	0.06 *	0.12 *
EBT	4	6,400	1,214	1,729	0.19	0.27
EBR	1 0	1,600	169	368	0.00	0.00
WBL	2	2,880	103	193	0.04	0.07
WBT	2.5	4,000	1,539	969	0.38 *	0.24 *
WBR	1.5 0	2,400	817	594	0.00	0.00
					0.36	0.42
					0.44	0.36
					0.00	0.00
					0.10	0.10
ICU					0.90	0.88
Level of Service (LOS)					D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 85
North/South Roadway: Ximeno Avenue
East/West Roadway: PCH
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	378	366	0.13	*	0.13	*
NBT	2		3,200	400	510	0.14		0.18	
NBR	0		0	37	66	0.00		0.00	
SBL	1		1,600	69	106	0.04		0.07	
SBT	2		3,200	377	564	0.13	*	0.19	*
SBR	0		0	24	44	0.00		0.00	
EBL	1		1,600	80	108	0.05	*	0.07	
EBT	2		3,200	640	1,071	0.20		0.33	*
EBR	1	0	1,600	352	376	0.00		0.00	
WBL	1		1,600	79	83	0.05		0.05	*
WBT	2		3,200	959	681	0.30	*	0.21	
WBR	1	0	1,600	82	140	0.00		0.00	
N/S Critical Movements						0.26		0.32	
E/W Critical Movements						0.35		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.71		0.80	
Level of Service (LOS)						C		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	437	423	0.15	*	0.15	*
NBT	2		3,200	462	589	0.16		0.21	
NBR	0		0	42	68	0.00		0.00	
SBL	1		1,600	80	123	0.05		0.08	
SBT	2		3,200	436	652	0.14	*	0.22	*
SBR	0		0	28	51	0.00		0.00	
EBL	1		1,600	92	125	0.06	*	0.08	
EBT	2		3,200	740	1,238	0.23		0.39	*
EBR	1	0	1,600	407	435	0.00		0.00	
WBL	1		1,600	89	93	0.06		0.06	*
WBT	2		3,200	1,108	725	0.35	*	0.23	
WBR	1	0	1,600	95	162	0.00		0.00	
						0.29		0.37	
						0.41		0.45	
						0.00		0.00	
						0.10		0.10	
ICU						0.80		0.92	
Level of Service (LOS)						C		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	385	423	0.13	*	0.15	*
NBT	2		3,200	462	589	0.16		0.21	
NBR	0		0	39	70	0.00		0.00	
SBL	1		1,600	80	123	0.05		0.08	
SBT	2		3,200	436	652	0.14	*	0.22	*
SBR	0		0	28	51	0.00		0.00	
EBL	1		1,600	92	125	0.06	*	0.08	
EBT	2		3,200	740	1,075	0.23		0.34	*
EBR	1	0	1,600	407	435	0.00		0.00	
WBL	1		1,600	79	96	0.05		0.06	*
WBT	2		3,200	1,108	719	0.35	*	0.22	
WBR	1	0	1,600	95	162	0.00		0.00	
N/S Critical Movements						0.27		0.37	
E/W Critical Movements						0.41		0.40	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.78		0.87	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	385	423	0.13	*	0.15	*
NBT	2		3,200	462	589	0.16		0.21	
NBR	0		0	39	70	0.00		0.00	
SBL	1		1,600	80	123	0.05		0.08	
SBT	2		3,200	436	652	0.14	*	0.22	*
SBR	0		0	28	51	0.00		0.00	
EBL	1		1,600	92	125	0.06	*	0.08	
EBT	2		3,200	740	1,075	0.23		0.34	*
EBR	1	0	1,600	407	435	0.00		0.00	
WBL	1		1,600	79	96	0.05		0.06	*
WBT	2		3,200	1,108	719	0.35	*	0.22	
WBR	1	0	1,600	95	162	0.00		0.00	
						0.27		0.37	
						0.41		0.40	
						0.00		0.00	
						0.10		0.10	
ICU						0.78		0.87	
Level of Service (LOS)						C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 86
North/South Roadway: Ximeno Avenue
East/West Roadway: 7th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	53	33	0.03		0.02	
NBT	1		1,600	320	307	0.26	*	0.25	*
NBR	0		0	97	90	0.00		0.00	
SBL	1		1,600	77	46	0.05	*	0.03	*
SBT	1		1,600	186	384	0.12		0.24	
SBR	1	0	1,600	152	103	0.00		0.00	
EBL	1		1,600	128	95	0.08		0.06	*
EBT	2		3,200	1,499	1,242	0.48	*	0.40	
EBR	0		0	31	28	0.00		0.00	
WBL	1		1,600	45	74	0.03	*	0.05	
WBT	2		3,200	1,269	1,289	0.41		0.41	*
WBR	0		0	39	28	0.00		0.00	
N/S Critical Movements						0.31		0.28	
E/W Critical Movements						0.51		0.47	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.92		0.85	
Level of Service (LOS)						E		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	61	34	0.04		0.02	
1		1,600	370	355	0.30	*	0.28	*
0		0	112	90	0.00		0.00	
1		1,600	89	53	0.06	*	0.03	*
1		1,600	215	444	0.13		0.28	
1	0	1,600	176	119	0.00		0.00	
1		1,600	128	110	0.08		0.07	*
2		3,200	1,732	1,435	0.55	*	0.46	
0		0	36	28	0.00		0.00	
1		1,600	47	75	0.03	*	0.05	
2		3,200	1,467	1,490	0.47		0.48	*
0		0	44	32	0.00		0.00	
					0.36		0.31	
					0.58		0.55	
					0.00		0.00	
					0.10		0.10	
ICU					1.04		0.96	
Level of Service (LOS)					F		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	61	38	0.04		0.02	
NBT	1		1,600	370	355	0.30	*	0.28	*
NBR	0		0	112	91	0.00		0.00	
SBL	1		1,600	89	53	0.06	*	0.03	*
SBT	1		1,600	215	444	0.13		0.28	
SBR	1	0	1,600	176	119	0.00		0.00	
EBL	1		1,600	128	110	0.08		0.07	*
EBT	2		3,200	1,732	1,435	0.55	*	0.46	
EBR	0		0	36	32	0.00		0.00	
WBL	1		1,600	49	75	0.03	*	0.05	
WBT	2		3,200	1,288	1,490	0.42		0.48	*
WBR	0		0	47	32	0.00		0.00	
N/S Critical Movements						0.36		0.31	
E/W Critical Movements						0.58		0.55	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.04		0.96	
Level of Service (LOS)						F		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	61	38	0.04		0.02	
1		1,600	370	355	0.30	*	0.28	*
0		0	112	91	0.00		0.00	
1		1,600	89	53	0.06	*	0.03	*
1		1,600	215	444	0.13		0.28	
1	0	1,600	176	119	0.00		0.00	
1		1,600	128	110	0.08		0.07	*
3		4,800	1,732	1,435	0.37	*	0.31	
0		0	36	32	0.00		0.00	
1		1,600	49	75	0.03	*	0.05	
3		4,800	1,288	1,490	0.28		0.32	*
0		0	47	32	0.00		0.00	
					0.36		0.31	
					0.40		0.39	
					0.00		0.00	
					0.10		0.10	
ICU					0.86		0.80	
Level of Service (LOS)					D		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 87
North/South Roadway: Ximeno Avenue
East/West Roadway: 4th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	20	18	0.01	0.01 *
NBT	1	1,600	269	242	0.19 *	0.17
NBR	0	0	20	18	0.00	0.00
SBL	0	0	56	57	0.04 *	0.04
SBT	1	1,600	181	291	0.19	0.27 *
SBR	0	0	61	78	0.00	0.00
EBL	1	1,600	77	76	0.05	0.05 *
EBT	1	1,600	452	493	0.30 *	0.32
EBR	0	0	29	21	0.00	0.00
WBL	1	1,600	11	19	0.01 *	0.01
WBT	1	1,600	245	432	0.19	0.31 *
WBR	0	0	53	59	0.00	0.00
N/S Critical Movements					0.23	0.28
E/W Critical Movements					0.31	0.36
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.64	0.74
Level of Service (LOS)					B	C

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	23	21	0.01	0.01 *
NBT	1	1,600	311	280	0.22 *	0.20
NBR	0	0	25	21	0.00	0.00
SBL	0	0	60	57	0.04 *	0.04
SBT	1	1,600	209	336	0.21	0.30 *
SBR	0	0	71	90	0.00	0.00
EBL	1	1,600	89	77	0.06	0.05 *
EBT	1	1,600	522	570	0.35 *	0.37
EBR	0	0	34	24	0.00	0.00
WBL	1	1,600	11	22	0.01 *	0.01
WBT	1	1,600	251	499	0.20	0.35 *
WBR	0	0	61	65	0.00	0.00
					0.26	0.31
					0.36	0.40
					0.00	0.00
					0.10	0.10
ICU					0.72	0.81
Level of Service (LOS)					C	D

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	24	21	0.02	0.01 *
NBT	1	1,600	269	280	0.20 *	0.20
NBR	0	0	22	21	0.00	0.00
SBL	0	0	56	60	0.04 *	0.04
SBT	1	1,600	209	336	0.21	0.30 *
SBR	0	0	66	90	0.00	0.00
EBL	1	1,600	89	88	0.06	0.05 *
EBT	1	1,600	522	570	0.35 *	0.37
EBR	0	0	34	24	0.00	0.00
WBL	1	1,600	11	22	0.01 *	0.01
WBT	1	1,600	285	499	0.22	0.35 *
WBR	0	0	61	62	0.00	0.00
N/S Critical Movements					0.24	0.31
E/W Critical Movements					0.36	0.40
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.70	0.81
Level of Service (LOS)					B	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	24	21	0.02	0.01 *
NBT	1	1,600	269	280	0.20 *	0.20
NBR	0	0	22	21	0.00	0.00
SBL	0	0	56	60	0.04 *	0.04
SBT	1	1,600	209	336	0.21	0.30 *
SBR	0	0	66	90	0.00	0.00
EBL	1	1,600	89	88	0.06	0.05 *
EBT	1	1,600	522	570	0.35 *	0.37
EBR	0	0	34	24	0.00	0.00
WBL	1	1,600	11	22	0.01 *	0.01
WBT	1	1,600	285	499	0.22	0.35 *
WBR	0	0	61	62	0.00	0.00
					0.24	0.31
					0.36	0.40
					0.00	0.00
					0.10	0.10
ICU					0.70	0.81
Level of Service (LOS)					B	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 88
North/South Roadway: Park Ave
East/West Roadway: 7th St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	20	33	0.01		0.02	
NBT	1		1,600	314	284	0.20	*	0.18	*
NBR	1	0	1,600	354	250	0.00		0.00	
SBL	1		1,600	99	79	0.06	*	0.05	*
SBT	1		1,600	177	301	0.11		0.19	
SBR	1	0	1,600	75	30	0.00		0.00	
EBL	1		1,600	54	38	0.03		0.02	
EBT	2		3,200	1,576	1,396	0.50	*	0.46	*
EBR	0		0	37	60	0.00		0.00	
WBL	1		1,600	116	169	0.07	*	0.11	*
WBT	2		3,200	1,175	1,453	0.39		0.48	
WBR	0		0	66	86	0.00		0.00	
N/S Critical Movements						0.26		0.23	
E/W Critical Movements						0.57		0.57	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.93		0.90	
Level of Service (LOS)						E		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	23	38	0.01		0.02	
1		1,600	363	328	0.23	*	0.21	*
1	0	1,600	428	289	0.00		0.00	
1		1,600	144	88	0.09	*	0.06	*
1		1,600	205	348	0.13		0.22	
1	0	1,600	87	30	0.00		0.00	
1		1,600	62	44	0.04		0.03	
2		3,200	1,821	1,613	0.58	*	0.53	*
0		0	43	69	0.00		0.00	
1		1,600	140	195	0.09	*	0.12	*
2		3,200	1,358	1,679	0.45		0.55	
0		0	93	94	0.00		0.00	
					0.32		0.27	
					0.67		0.65	
					0.00		0.00	
					0.10		0.10	
					1.09		1.02	
					F		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	23	38	0.01		0.02	
NBT	1		1,600	363	328	0.23	*	0.21	*
NBR	1	0	1,600	422	289	0.00		0.00	
SBL	1		1,600	139	91	0.09	*	0.06	*
SBT	1		1,600	205	348	0.13		0.22	
SBR	1	0	1,600	87	35	0.00		0.00	
EBL	1		1,600	62	38	0.04		0.02	
EBT	2		3,200	1,821	1,613	0.58	*	0.53	*
EBR	0		0	43	69	0.00		0.00	
WBL	1		1,600	140	195	0.09	*	0.12	*
WBT	2		3,200	1,358	1,679	0.45		0.56	
WBR	0		0	93	98	0.00		0.00	
N/S Critical Movements						0.32		0.27	
E/W Critical Movements						0.67		0.65	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.09		1.02	
Level of Service (LOS)						F		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	23	38	0.01		0.02	
1		1,600	363	328	0.23	*	0.21	*
1	0	1,600	422	289	0.00		0.00	
1		1,600	139	91	0.09	*	0.06	*
1		1,600	205	348	0.13		0.22	
1	0	1,600	87	35	0.00		0.00	
1		1,600	62	38	0.04		0.02	
3		4,800	1,821	1,613	0.39	*	0.35	*
0		0	43	69	0.00		0.00	
1		1,600	140	195	0.09	*	0.12	*
3		4,800	1,358	1,679	0.30		0.37	
0		0	93	98	0.00		0.00	
					0.32		0.27	
					0.48		0.47	
					0.00		0.00	
					0.10		0.10	
					0.90		0.84	
					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 89
North/South Roadway: Park Avenue
East/West Roadway: 4st Street
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	21	17	0.01	0.01 *
NBT	1	1,600	364	239	0.23 *	0.15
NBR	0	0	6	5	0.00	0.00
SBL	1	1,600	115	141	0.07 *	0.09
SBT	1	1,600	154	269	0.14	0.24 *
SBR	0	0	68	115	0.00	0.00
EBL	1	1,600	211	142	0.13 *	0.09 *
EBT	1	1,600	340	403	0.22	0.27
EBR	0	0	13	36	0.00	0.00
WBL	1	1,600	2	9	0.00	0.01
WBT	1	1,600	198	409	0.21 *	0.32 *
WBR	0	0	140	101	0.00	0.00
N/S Critical Movements					0.30	0.25
E/W Critical Movements					0.34	0.41
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.74	0.76
Level of Service (LOS)					C	C

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	24	20	0.02	0.01 *
1	1,600	421	276	0.27 *	0.18
0	0	6	6	0.00	0.00
1	1,600	116	155	0.07 *	0.10
1	1,600	178	311	0.16	0.28 *
0	0	79	133	0.00	0.00
1	1,600	212	142	0.13 *	0.09 *
1	1,600	393	466	0.25	0.32
0	0	15	42	0.00	0.00
1	1,600	2	10	0.00	0.01
1	1,600	202	473	0.22 *	0.37 *
0	0	157	120	0.00	0.00
				0.34	0.29
				0.35	0.46
				0.00	0.00
				0.10	0.10
ICU				0.79	0.85
Level of Service (LOS)				C	D

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	22	20	0.01	0.01 *
NBT	1	1,600	364	276	0.23 *	0.18
NBR	0	0	7	6	0.00	0.00
SBL	1	1,600	133	154	0.08 *	0.10
SBT	1	1,600	178	311	0.16	0.28 *
SBR	0	0	74	133	0.00	0.00
EBL	1	1,600	244	146	0.15 *	0.09 *
EBT	1	1,600	393	466	0.25	0.32
EBR	0	0	15	42	0.00	0.00
WBL	1	1,600	2	10	0.00	0.01
WBT	1	1,600	229	473	0.24 *	0.37 *
WBR	0	0	157	119	0.00	0.00
N/S Critical Movements					0.31	0.29
E/W Critical Movements					0.39	0.46
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.80	0.85
Level of Service (LOS)					C	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	22	20	0.01	0.01 *
1	1,600	364	276	0.23 *	0.18
0	0	7	6	0.00	0.00
1	1,600	133	154	0.08 *	0.10
1	1,600	178	311	0.16	0.28 *
0	0	74	133	0.00	0.00
1	1,600	244	146	0.15 *	0.09 *
1	1,600	393	466	0.25	0.32
0	0	15	42	0.00	0.00
1	1,600	2	10	0.00	0.01
1	1,600	229	473	0.24 *	0.37 *
0	0	157	119	0.00	0.00
				0.31	0.29
				0.39	0.46
				0.00	0.00
				0.10	0.10
ICU				0.80	0.85
Level of Service (LOS)				C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 90
North/South Roadway: Livingston Dr
East/West Roadway: 2nd St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	1		1,600	95	158	0.06	*	0.10	*
NBR	2	0	3,200	664	1,041	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	*
SBT	1		1,600	66	108	0.05		0.09	
SBR	0		0	9	37	0.00		0.00	
EBL	0		0	16	36	0.01		0.02	
EBT	1		1,600	160	178	0.11	*	0.13	*
EBR	0		0	0	0	0.00		0.00	
WBL	2		2,400	1,034	705	0.43	*	0.29	*
WBT	1		800	166	194	0.21		0.24	
WBR	1	0	1,600	3	15	0.00		0.00	
N/S Critical Movements						0.06		0.10	
E/W Critical Movements						0.54		0.42	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.70		0.62	
Level of Service (LOS)						B		B	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	*
NBT	1		1,600	116	183	0.07	*	0.11	
NBR	2	0	3,200	767	1,053	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	
SBT	1		1,600	76	137	0.05		0.11	*
SBR	0		0	9	45	0.00		0.00	
EBL	0		0	21	42	0.01		0.03	
EBT	1		1,600	185	184	0.13	*	0.14	*
EBR	0		0	0	0	0.00		0.00	
WBL	2		2,400	1,195	712	0.50	*	0.30	*
WBT	1		800	166	224	0.21		0.28	
WBR	1	0	1,600	4	17	0.00		0.00	
						0.07		0.11	
						0.63		0.44	
						0.00		0.00	
						0.10		0.10	
ICU						0.80		0.65	
Level of Service (LOS)						C		B	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	*
NBT	1		1,600	114	183	0.07	*	0.11	
NBR	2	0	3,200	767	1,057	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	
SBT	1		1,600	76	133	0.05		0.11	*
SBR	0		0	10	44	0.00		0.00	
EBL	0		0	22	42	0.01		0.03	
EBT	1		1,600	185	183	0.13	*	0.14	*
EBR	0		0	0	0	0.00		0.00	
WBL	2		2,400	1,195	815	0.50	*	0.34	*
WBT	1		800	167	224	0.21		0.28	
WBR	1	0	1,600	4	17	0.00		0.00	
N/S Critical Movements						0.07		0.11	
E/W Critical Movements						0.63		0.48	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.80		0.69	
Level of Service (LOS)						C		B	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	*
NBT	1		1,600	114	183	0.07	*	0.11	
NBR	2	0	3,200	767	1,057	0.00		0.00	
SBL	0		0	0	0	0.00	*	0.00	
SBT	1		1,600	76	133	0.05		0.11	*
SBR	0		0	10	44	0.00		0.00	
EBL	0		0	22	42	0.01		0.03	
EBT	1		1,600	185	183	0.13	*	0.14	*
EBR	0		0	0	0	0.00		0.00	
WBL	2		2,400	1,195	815	0.50	*	0.34	*
WBT	1		800	167	224	0.21		0.28	
WBR	1	0	1,600	4	17	0.00		0.00	
						0.07		0.11	
						0.63		0.48	
						0.00		0.00	
						0.10		0.10	
ICU						0.80		0.69	
Level of Service (LOS)						C		B	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 91
North/South Roadway: Pacific Coast Hwy
East/West Roadway: Anaheim St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	403	400	0.25	*	0.25	*
NBT	3		4,800	1,366	886	0.30		0.20	
NBR	0		0	51	66	0.00		0.00	
SBL	1		1,600	89	55	0.06		0.03	
SBT	2		3,200	779	1,074	0.25	*	0.34	*
SBR	0		0	21	27	0.00		0.00	
EBL	0		0	24	58	0.02		0.04	*
EBT	2		3,200	212	190	0.07	*	0.06	
EBR	1	0	1,600	571	520	0.00		0.00	
WBL	0		0	40	51	0.03	*	0.03	
WBT	2		3,200	113	225	0.04		0.07	*
WBR	1	0	1,600	58	87	0.00		0.00	
N/S Critical Movements						0.50		0.59	
E/W Critical Movements						0.10		0.11	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.70		0.80	
Level of Service (LOS)						B		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	546	462	0.34	*	0.29	*
NBT	3		4,800	1,579	926	0.38		0.21	
NBR	0		0	262	76	0.00		0.00	
SBL	1		1,600	103	64	0.06		0.04	
SBT	2		3,200	900	1,241	0.29	*	0.40	*
SBR	0		0	24	31	0.00		0.00	
EBL	0		0	28	67	0.02		0.04	*
EBT	2		3,200	245	220	0.08	*	0.07	
EBR	1	0	1,600	1,087	520	0.00		0.00	
WBL	0		0	294	54	0.18	*	0.03	
WBT	2		3,200	131	260	0.04		0.08	*
WBR	1	0	1,600	67	90	0.00		0.00	
						0.63		0.69	
						0.26		0.12	
						0.00		0.00	
						0.10		0.10	
ICU						0.99		0.91	
Level of Service (LOS)						E		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	594	462	0.37	*	0.29	*
NBT	3		4,800	1,579	928	0.38		0.21	
NBR	0		0	229	76	0.00		0.00	
SBL	1		1,600	103	64	0.06		0.04	
SBT	2		3,200	900	1,241	0.29	*	0.40	*
SBR	0		0	24	31	0.00		0.00	
EBL	0		0	28	67	0.02		0.04	*
EBT	2		3,200	245	220	0.08	*	0.07	
EBR	1	0	1,600	1,060	521	0.00		0.00	
WBL	0		0	305	59	0.19	*	0.04	
WBT	2		3,200	131	260	0.04		0.08	*
WBR	1	0	1,600	67	101	0.00		0.00	
N/S Critical Movements						0.66		0.69	
E/W Critical Movements						0.27		0.12	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.03		0.91	
Level of Service (LOS)						F		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	594	462	0.21	*	0.16	*
3		4,800	1,579	928	0.38		0.21	
0		0	229	76	0.00		0.00	
1		1,600	103	64	0.06		0.04	
2		3,200	900	1,241	0.29	*	0.40	*
0		0	24	31	0.00		0.00	
0		0	28	67	0.02		0.04	*
2		3,200	245	220	0.08	*	0.07	
1	0	1,600	1,060	521	0.00		0.00	
0		0	305	59	0.19	*	0.04	
2		3,200	131	260	0.04		0.08	*
1	0	1,600	67	101	0.00		0.00	
					0.50		0.56	
					0.27		0.12	
					0.00		0.00	
					0.10		0.10	
ICU					0.87		0.78	
Level of Service (LOS)					D		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 92
North/South Roadway: Pacific Coast Hwy
East/West Roadway: 7th St
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	129	211	0.08	0.13
NBT	3	4,800	1,165	926	0.24 *	0.20 *
NBR	0	0	4	10	0.00	0.00
SBL	2	2,880	538	550	0.19 *	0.19 *
SBT	3	4,800	883	941	0.19	0.20
SBR	0	0	5	10	0.00	0.00
EBL	0	0	0	0	0.00	0.00 *
EBT	3	4,800	1,856	1,431	0.42 *	0.32
EBR	0	0	183	122	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00
WBT	2	3,200	1,247	1,504	0.39	0.47 *
WBR	1 0	1,600	477	422	0.00	0.00
N/S Critical Movements					0.43	0.39
E/W Critical Movements					0.42	0.47
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.95	0.96
Level of Service (LOS)					E	E

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	149	214	0.09	0.13
3	4,800	1,346	932	0.28 *	0.20 *
0	0	4	11	0.00	0.00
2	2,880	553	589	0.19 *	0.20 *
3	4,800	1,021	1,088	0.21	0.23
0	0	5	10	0.00	0.00
0	0	0	0	0.00	0.00 *
3	4,800	2,145	1,654	0.49 *	0.37
0	0	212	141	0.00	0.00
0	0	0	0	0.00 *	0.00
2	3,200	1,441	1,738	0.45	0.54 *
1 0	1,600	494	488	0.00	0.00
				0.47	0.40
				0.49	0.54
				0.00	0.00
				0.10	0.10
ICU				1.06	1.04
Level of Service (LOS)				F	F

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	149	244	0.09	0.15
NBT	3	4,800	1,346	1,070	0.28 *	0.23 *
NBR	0	0	4	10	0.00	0.00
SBL	2	2,880	552	565	0.19 *	0.20 *
SBT	3	4,800	1,021	1,088	0.21	0.23
SBR	0	0	5	10	0.00	0.00
EBL	0	0	0	0	0.00	0.00 *
EBT	3	4,800	2,145	1,654	0.49 *	0.37
EBR	0	0	212	141	0.00	0.00
WBL	0	0	0	0	0.00 *	0.00
WBT	2	3,200	1,441	1,738	0.45	0.54 *
WBR	1 0	1,600	485	488	0.00	0.00
N/S Critical Movements					0.47	0.43
E/W Critical Movements					0.49	0.54
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					1.06	1.07
Level of Service (LOS)					F	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	149	244	0.09	0.15 *
3	4,800	1,346	1,070	0.28 *	0.23
0	0	4	10	0.00	0.00
3	4,800	552	565	0.12 *	0.12
3	4,800	1,021	1,088	0.21	0.23 *
0	0	5	10	0.00	0.00
0	0	0	0	0.00	0.00 *
4	6,400	2,145	1,654	0.37 *	0.28
0	0	212	141	0.00	0.00
0	0	0	0	0.00 *	0.00
3	4,800	1,441	1,738	0.30	0.36 *
1 0	1,600	485	488	0.00	0.00
				0.40	0.38
				0.37	0.36
				0.00	0.00
				0.10	0.10
ICU				0.87	0.84
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 93
North/South Roadway: Belflower Boulevard
East/West Roadway: Del Amo Boulevard
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	185	238	0.12	*	0.15	
NBT	2		3,200	498	817	0.19		0.33	*
NBR	0		0	122	236	0.00		0.00	
SBL	1		1,600	153	196	0.10		0.12	*
SBT	2		3,200	646	485	0.20	*	0.15	
SBR	1	0	1,600	77	90	0.00		0.00	
EBL	1		1,600	64	96	0.04	*	0.06	
EBT	2		3,200	827	1,219	0.26		0.38	*
EBR	1	0	1,600	257	165	0.00		0.00	
WBL	1		1,600	165	168	0.10		0.11	*
WBT	2		3,200	1,155	1,005	0.36	*	0.31	
WBR	1	0	1,600	108	156	0.00		0.00	
N/S Critical Movements						0.32		0.45	
E/W Critical Movements						0.40		0.49	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.82		1.04	
Level of Service (LOS)						D		F	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	214	275	0.13	*	0.17	
2		3,200	576	944	0.22		0.38	*
0		0	141	273	0.00		0.00	
1		1,600	177	227	0.11		0.14	*
2		3,200	747	561	0.23	*	0.18	
1	0	1,600	89	104	0.00		0.00	
1		1,600	74	111	0.05	*	0.07	
2		3,200	956	1,409	0.30		0.44	*
1	0	1,600	262	191	0.00		0.00	
1		1,600	196	194	0.12		0.12	*
2		3,200	1,335	1,162	0.42	*	0.36	
1	0	1,600	125	180	0.00		0.00	
					0.36		0.52	
					0.47		0.56	
					0.00		0.00	
					0.10		0.10	
ICU					0.93		1.18	
Level of Service (LOS)					E		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	214	275	0.13	*	0.17	
NBT	2		3,200	576	944	0.22		0.38	*
NBR	0		0	141	259	0.00		0.00	
SBL	1		1,600	177	227	0.11		0.14	*
SBT	2		3,200	747	561	0.23	*	0.18	
SBR	1	0	1,600	89	104	0.00		0.00	
EBL	1		1,600	74	111	0.05	*	0.07	
EBT	2		3,200	956	1,409	0.30		0.44	*
EBR	1	0	1,600	272	191	0.00		0.00	
WBL	1		1,600	232	194	0.15		0.12	*
WBT	2		3,200	1,335	1,162	0.42	*	0.36	
WBR	1	0	1,600	125	180	0.00		0.00	
N/S Critical Movements						0.36		0.52	
E/W Critical Movements						0.47		0.56	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.93		1.18	
Level of Service (LOS)						E		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	214	275	0.13	*	0.17	
3		4,800	576	944	0.15		0.25	*
0		0	141	259	0.00		0.00	
1		1,600	177	227	0.11		0.14	*
2		3,200	747	561	0.23	*	0.18	
1	0	1,600	89	104	0.00		0.00	
1		1,600	74	111	0.05	*	0.07	
3		4,800	956	1,409	0.20		0.29	*
1	0	1,600	272	191	0.00		0.00	
1		1,600	232	194	0.15		0.12	*
3		4,800	1,335	1,162	0.30	*	0.28	
0		0	125	180	0.00		0.00	
					0.36		0.39	
					0.35		0.41	
					0.00		0.00	
					0.10		0.10	
ICU					0.81		0.90	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 94
North/South Roadway: Belflower Boulevard
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	129	155	0.08	*	0.10	
NBT	2		3,200	561	935	0.18		0.29	*
NBR	1	0	1,600	112	179	0.00		0.00	
SBL	1		1,600	122	176	0.08		0.11	*
SBT	2		3,200	771	543	0.27	*	0.20	
SBR	0		0	87	84	0.00		0.00	
EBL	1		1,600	93	168	0.06	*	0.11	
EBT	3		4,800	591	1,419	0.15		0.33	*
EBR	0		0	142	146	0.00		0.00	
WBL	1		1,600	185	167	0.12		0.10	*
WBT	3		4,800	1,185	844	0.28	*	0.22	
WBR	0		0	140	221	0.00		0.00	
N/S Critical Movements						0.35		0.40	
E/W Critical Movements						0.34		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.79		0.93	
Level of Service (LOS)						C		E	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	149	179	0.09	*	0.11	
2		3,200	648	1,081	0.20		0.34	*
1	0	1,600	129	181	0.00		0.00	
1		1,600	147	226	0.09		0.14	*
2		3,200	891	628	0.31	*	0.23	
0		0	101	97	0.00		0.00	
1		1,600	107	194	0.07	*	0.12	
3		4,800	683	1,640	0.18		0.38	*
0		0	164	169	0.00		0.00	
1		1,600	214	193	0.13		0.12	*
3		4,800	1,370	975	0.31	*	0.26	
0		0	142	270	0.00		0.00	
					0.40		0.48	
					0.38		0.50	
					0.00		0.00	
					0.10		0.10	
ICU					0.88		1.08	
Level of Service (LOS)					D		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	149	179	0.09	*	0.11	
NBT	2		3,200	648	1,081	0.20		0.34	*
NBR	1	0	1,600	129	207	0.00		0.00	
SBL	1		1,600	156	181	0.10		0.11	*
SBT	2		3,200	778	628	0.27	*	0.23	
SBR	0		0	92	97	0.00		0.00	
EBL	1		1,600	107	194	0.07	*	0.12	
EBT	3		4,800	683	1,640	0.18		0.38	*
EBR	0		0	164	169	0.00		0.00	
WBL	1		1,600	214	193	0.13		0.12	*
WBT	3		4,800	1,370	975	0.32	*	0.25	
WBR	0		0	162	238	0.00		0.00	
N/S Critical Movements						0.36		0.45	
E/W Critical Movements						0.39		0.50	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.85		1.05	
Level of Service (LOS)						D		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	149	179	0.09	*	0.11	*
3		4,800	648	1,081	0.14		0.23	
1	0	1,600	129	207	0.00		0.00	
1		1,600	156	181	0.10		0.11	
2		3,200	778	628	0.27	*	0.23	*
0		0	92	97	0.00		0.00	
1		1,600	107	194	0.07	*	0.12	
3		4,800	683	1,640	0.14		0.34	*
1	0	1,600	164	169	0.00		0.00	
1		1,600	214	193	0.13		0.12	*
3		4,800	1,370	975	0.32	*	0.25	
0		0	162	238	0.00		0.00	
					0.36		0.34	
					0.39		0.46	
					0.00		0.00	
					0.10		0.10	
ICU					0.85		0.90	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 95
North/South Roadway: Belflower Boulevard
East/West Roadway: Spring Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	195	142	0.12	*	0.09	
NBT	3		4,800	785	1,137	0.16		0.24	*
NBR	1	0	1,600	103	129	0.00		0.00	
SBL	1		1,600	84	101	0.05		0.06	*
SBT	4		6,400	1,059	650	0.19	*	0.11	
SBR	0		0	174	71	0.00		0.00	
EBL	1		1,600	77	159	0.05	*	0.10	
EBT	3		4,800	386	1,262	0.10		0.29	*
EBR	0		0	110	148	0.00		0.00	
WBL	1		1,600	159	159	0.10		0.10	*
WBT	3		4,800	1,461	615	0.30	*	0.13	
WBR	1	0	1,600	100	147	0.00		0.00	
N/S Critical Movements						0.31		0.30	
E/W Critical Movements						0.35		0.39	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.76		0.79	
Level of Service (LOS)						C		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	276	213	0.17	*	0.13	
NBT	3		4,800	907	1,314	0.19		0.27	*
NBR	1	0	1,600	119	149	0.00		0.00	
SBL	1		1,600	97	117	0.06		0.07	*
SBT	4		6,400	1,224	751	0.22	*	0.13	
SBR	0		0	201	82	0.00		0.00	
EBL	1		1,600	89	184	0.06	*	0.11	
EBT	3		4,800	446	1,459	0.13		0.35	*
EBR	0		0	185	198	0.00		0.00	
WBL	1		1,600	165	184	0.10		0.11	*
WBT	3		4,800	1,689	711	0.35	*	0.15	
WBR	1	0	1,600	116	170	0.00		0.00	
						0.39		0.34	
						0.41		0.46	
						0.00		0.00	
						0.10		0.10	
ICU						0.90		0.90	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	275	197	0.17	*	0.12	
NBT	3		4,800	907	1,141	0.19		0.24	*
NBR	1	0	1,600	111	149	0.00		0.00	
SBL	1		1,600	97	117	0.06		0.07	*
SBT	4		6,400	1,224	751	0.22	*	0.13	
SBR	0		0	201	82	0.00		0.00	
EBL	1		1,600	89	189	0.06	*	0.12	
EBT	3		4,800	446	1,459	0.12		0.35	*
EBR	0		0	124	245	0.00		0.00	
WBL	1		1,600	171	184	0.11		0.11	*
WBT	3		4,800	1,534	711	0.32	*	0.15	
WBR	1	0	1,600	116	170	0.00		0.00	
N/S Critical Movements						0.39		0.31	
E/W Critical Movements						0.38		0.46	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.87		0.87	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	275	197	0.17	*	0.12	
NBT	3		4,800	907	1,141	0.19		0.24	*
NBR	1	0	1,600	111	149	0.00		0.00	
SBL	1		1,600	97	117	0.06		0.07	*
SBT	4		6,400	1,224	751	0.22	*	0.13	
SBR	0		0	201	82	0.00		0.00	
EBL	1		1,600	89	189	0.06	*	0.12	
EBT	3		4,800	446	1,459	0.12		0.35	*
EBR	0		0	124	245	0.00		0.00	
WBL	1		1,600	171	184	0.11		0.11	*
WBT	3		4,800	1,534	711	0.32	*	0.15	
WBR	1	0	1,600	116	170	0.00		0.00	
						0.39		0.31	
						0.38		0.46	
						0.00		0.00	
						0.10		0.10	
ICU						0.87		0.87	
Level of Service (LOS)						D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 96
North/South Roadway: Belflower Boulevard
East/West Roadway: Los Coyotes Diagonal
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	18	34	0.01	*	0.02	
NBT	3		4,800	998	1,584	0.21		0.33	*
NBR	1	0	1,600	392	575	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	*
SBT	3		4,800	680	865	0.23	*	0.27	
SBR	0		0	410	409	0.00		0.00	
EBL	1		1,600	251	237	0.16	*	0.15	
EBT	3		4,000	819	1,084	0.20		0.27	*
EBR	2	0	2,400	515	372	0.00		0.00	
WBL	1		1,600	157	186	0.10		0.12	*
WBT	3		4,800	729	612	0.15	*	0.13	
WBR	0		0	2	6	0.00		0.00	
N/S Critical Movements						0.24		0.33	
E/W Critical Movements						0.31		0.39	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.65		0.82	
Level of Service (LOS)						B		D	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	21	35	0.01	*	0.02	
NBT	3		4,800	1,153	1,645	0.24		0.34	*
NBR	1	0	1,600	393	665	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	*
SBT	3		4,800	786	1,000	0.26	*	0.31	
SBR	0		0	474	473	0.00		0.00	
EBL	1		1,600	290	274	0.18	*	0.17	
EBT	3		4,000	896	1,253	0.22		0.31	*
EBR	2	0	2,400	595	386	0.00		0.00	
WBL	1		1,600	177	215	0.11		0.13	*
WBT	3		4,800	731	707	0.15	*	0.15	
WBR	0		0	2	7	0.00		0.00	
						0.27		0.34	
						0.33		0.44	
						0.00		0.00	
						0.10		0.10	
ICU						0.70		0.88	
Level of Service (LOS)						B		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	18	39	0.01	*	0.02	
NBT	3		4,800	1,153	1,658	0.24		0.35	*
NBR	1	0	1,600	453	582	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	*
SBT	3		4,800	786	908	0.26	*	0.29	
SBR	0		0	474	473	0.00		0.00	
EBL	1		1,600	290	248	0.18	*	0.16	
EBT	3		4,000	824	1,096	0.21		0.27	*
EBR	2	0	2,400	526	430	0.00		0.00	
WBL	1		1,600	181	215	0.11		0.13	*
WBT	3		4,800	752	707	0.16	*	0.15	
WBR	0		0	2	7	0.00		0.00	
N/S Critical Movements						0.27		0.35	
E/W Critical Movements						0.34		0.40	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.71		0.85	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	18	39	0.01	*	0.02	
3		4,800	1,153	1,658	0.24		0.35	*
1	0	1,600	453	582	0.00		0.00	
0		0	0	0	0.00		0.00	*
3		4,800	786	908	0.26	*	0.29	
0		0	474	473	0.00		0.00	
1		1,600	290	248	0.18	*	0.16	
3		4,000	824	1,096	0.21		0.27	*
2	0	2,400	526	430	0.00		0.00	
1		1,600	181	215	0.11		0.13	*
3		4,800	752	707	0.16	*	0.15	
0		0	2	7	0.00		0.00	
					0.27		0.35	
					0.34		0.40	
					0.00		0.00	
					0.10		0.10	
ICU					0.71		0.85	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 97
North/South Roadway: Bellflower Blvd
East/West Roadway: Atherton St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	67	161	0.04	*	0.10	*
NBT	3		4,800	591	1,048	0.12		0.22	
NBR	1	0	1,600	230	214	0.00		0.00	
SBL	2		2,880	482	175	0.17		0.06	
SBT	3		4,800	1,197	868	0.27	*	0.22	*
SBR	0		0	107	169	0.00		0.00	
EBL	1		1,600	81	169	0.05		0.11	*
EBT	2		3,200	670	492	0.27	*	0.20	
EBR	0		0	179	154	0.00		0.00	
WBL	1		1,600	183	212	0.11	*	0.13	
WBT	2		3,200	352	609	0.14		0.27	*
WBR	0		0	95	254	0.00		0.00	
N/S Critical Movements						0.31		0.32	
E/W Critical Movements						0.38		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.79		0.80	
Level of Service (LOS)						C		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	77	186	0.05	*	0.12	*
NBT	3		4,800	683	1,211	0.14		0.25	
NBR	1	0	1,600	266	247	0.00		0.00	
SBL	2		2,880	557	212	0.19		0.07	
SBT	3		4,800	1,383	1,003	0.32	*	0.25	*
SBR	0		0	171	195	0.00		0.00	
EBL	1		1,600	127	195	0.08		0.12	*
EBT	2		3,200	774	569	0.31	*	0.23	
EBR	0		0	207	178	0.00		0.00	
WBL	1		1,600	212	245	0.13	*	0.15	
WBT	2		3,200	407	704	0.16		0.32	*
WBR	0		0	110	309	0.00		0.00	
						0.37		0.37	
						0.44		0.44	
						0.00		0.00	
						0.10		0.10	
ICU						0.91		0.91	
Level of Service (LOS)						E		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	77	186	0.05	*	0.12	*
NBT	3		4,800	683	1,211	0.14		0.25	
NBR	1	0	1,600	266	247	0.00		0.00	
SBL	2		2,880	557	214	0.19		0.07	
SBT	3		4,800	1,383	1,003	0.31	*	0.25	*
SBR	0		0	124	195	0.00		0.00	
EBL	1		1,600	94	195	0.06		0.12	*
EBT	2		3,200	774	569	0.31	*	0.23	
EBR	0		0	207	178	0.00		0.00	
WBL	1		1,600	212	245	0.13	*	0.15	
WBT	2		3,200	356	704	0.15		0.31	*
WBR	0		0	110	302	0.00		0.00	
N/S Critical Movements						0.36		0.37	
E/W Critical Movements						0.44		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.90		0.90	
Level of Service (LOS)						D		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	77	186	0.05	*	0.12	*
NBT	3		4,800	683	1,211	0.14		0.25	
NBR	1	0	1,600	266	247	0.00		0.00	
SBL	2		2,880	557	214	0.19		0.07	
SBT	3		4,800	1,383	1,003	0.31	*	0.25	*
SBR	0		0	124	195	0.00		0.00	
EBL	1		1,600	94	195	0.06		0.12	*
EBT	2		3,200	774	569	0.31	*	0.23	
EBR	0		0	207	178	0.00		0.00	
WBL	1		1,600	212	245	0.13	*	0.15	
WBT	2		3,200	356	704	0.15		0.31	*
WBR	0		0	110	302	0.00		0.00	
						0.36		0.37	
						0.44		0.43	
						0.00		0.00	
						0.10		0.10	
ICU						0.90		0.90	
Level of Service (LOS)						D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 98
North/South Roadway: Bellflower Blvd
East/West Roadway: 7th St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	3		4,800	585	532	0.12	*	0.11	*
NBR	1	0	1,600	148	132	0.00		0.00	
SBL	2		2,880	215	332	0.07	*	0.12	*
SBT	2		3,200	311	628	0.10		0.20	
SBR	1	0	1,600	166	388	0.00		0.00	
EBL	1		1,600	279	154	0.17	*	0.10	*
EBT	3		4,800	2,049	1,795	0.43		0.38	
EBR	0		0	10	18	0.00		0.00	
WBL	1		1,600	30	43	0.02		0.03	
WBT	3		4,800	1,608	1,598	0.39	*	0.37	*
WBR	0		0	262	156	0.00		0.00	
N/S Critical Movements						0.19		0.23	
E/W Critical Movements						0.56		0.47	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.85		0.80	
Level of Service (LOS)						D		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	3		4,800	676	615	0.14	*	0.13	*
NBR	1	0	1,600	171	153	0.00		0.00	
SBL	2		2,880	248	384	0.09	*	0.13	*
SBT	2		3,200	359	726	0.11		0.23	
SBR	1	0	1,600	192	448	0.00		0.00	
EBL	1		1,600	322	165	0.20	*	0.10	*
EBT	3		4,800	2,050	2,075	0.43		0.44	
EBR	0		0	12	21	0.00		0.00	
WBL	1		1,600	35	50	0.02		0.03	
WBT	3		4,800	1,609	1,847	0.40	*	0.42	*
WBR	0		0	303	180	0.00		0.00	
						0.23		0.26	
						0.60		0.52	
						0.00		0.00	
						0.10		0.10	
ICU						0.93		0.88	
Level of Service (LOS)						E		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	3		4,800	676	615	0.14	*	0.13	*
NBR	1	0	1,600	171	153	0.00		0.00	
SBL	2		2,880	248	384	0.09	*	0.13	*
SBT	2		3,200	359	726	0.11		0.23	
SBR	1	0	1,600	192	448	0.00		0.00	
EBL	1		1,600	322	178	0.20	*	0.11	*
EBT	3		4,800	2,368	1,798	0.50		0.38	
EBR	0		0	12	21	0.00		0.00	
WBL	1		1,600	35	50	0.02		0.03	
WBT	3		4,800	1,631	1,847	0.40	*	0.42	*
WBR	0		0	303	180	0.00		0.00	
N/S Critical Movements						0.23		0.26	
E/W Critical Movements						0.60		0.53	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.93		0.89	
Level of Service (LOS)						E		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	3		4,800	676	615	0.14	*	0.13	*
NBR	1	0	1,600	171	153	0.00		0.00	
SBL	2		2,880	248	384	0.09	*	0.13	*
SBT	2		3,200	359	726	0.11		0.23	
SBR	1	0	1,600	192	448	0.00		0.00	
EBL	1		1,600	322	178	0.20	*	0.11	*
EBT	3		4,800	2,368	1,798	0.50		0.38	
EBR	0		0	12	21	0.00		0.00	
WBL	1		1,600	35	50	0.02		0.03	
WBT	3		4,800	1,631	1,847	0.34	*	0.38	*
WBR	1	0	1,600	303	180	0.00		0.00	
						0.23		0.26	
						0.54		0.49	
						0.00		0.00	
						0.10		0.10	
ICU						0.87		0.85	
Level of Service (LOS)						D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 99
North/South Roadway: Bellflower Blvd
East/West Roadway: Pacific Coast Hwy
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	90	58	0.06		0.04	
NBT	3		4,800	422	352	0.09	*	0.07	*
NBR	1	0	1,600	73	108	0.00		0.00	
SBL	1		1,600	239	400	0.15	*	0.25	*
SBT	3		4,800	121	313	0.03		0.07	
SBR	0		0	0	6	0.00		0.00	
EBL	1		1,600	78	85	0.05	*	0.05	
EBT	2		3,200	959	1,005	0.31		0.33	*
EBR	0		0	36	56	0.00		0.00	
WBL	2		2,400	25	103	0.01		0.04	*
WBT	3		4,000	1,273	1,012	0.32	*	0.25	
WBR	1	0	1,600	314	296	0.00		0.00	
N/S Critical Movements						0.24		0.32	
E/W Critical Movements						0.37		0.37	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.71		0.79	
Level of Service (LOS)						C		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	119	78	0.07		0.05	
3		4,800	488	407	0.10	*	0.08	*
1	0	1,600	84	125	0.00		0.00	
1		1,600	276	462	0.17	*	0.29	*
3		4,800	140	362	0.03		0.08	
0		0	0	6	0.00		0.00	
1		1,600	90	98	0.06	*	0.06	
2		3,200	1,108	1,162	0.36		0.38	*
0		0	39	62	0.00		0.00	
2		2,400	29	119	0.01		0.05	*
3		4,000	1,471	1,170	0.37	*	0.29	
1	0	1,600	363	342	0.00		0.00	
					0.27		0.37	
					0.43		0.43	
					0.00		0.00	
					0.10		0.10	
ICU					0.80		0.90	
Level of Service (LOS)					C		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	112	87	0.07		0.05	
NBT	3		4,800	488	407	0.10	*	0.08	*
NBR	1	0	1,600	84	125	0.00		0.00	
SBL	1		1,600	276	462	0.17	*	0.29	*
SBT	3		4,800	140	362	0.03		0.08	
SBR	0		0	0	6	0.00		0.00	
EBL	1		1,600	90	98	0.06	*	0.06	
EBT	2		3,200	1,108	1,162	0.36		0.38	*
EBR	0		0	43	69	0.00		0.00	
WBL	2		2,400	29	119	0.01		0.05	*
WBT	3		4,000	1,471	1,170	0.37	*	0.29	
WBR	1	0	1,600	363	342	0.00		0.00	
N/S Critical Movements						0.27		0.37	
E/W Critical Movements						0.43		0.43	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.80		0.90	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	112	87	0.07		0.05	
3		4,800	488	407	0.10	*	0.08	*
1	0	1,600	84	125	0.00		0.00	
1		1,600	276	462	0.17	*	0.29	*
3		4,800	140	362	0.03		0.08	
0		0	0	6	0.00		0.00	
1		1,600	90	98	0.06	*	0.06	
2		3,200	1,108	1,162	0.36		0.38	*
0		0	43	69	0.00		0.00	
2		2,400	29	119	0.01		0.05	*
3		4,000	1,471	1,170	0.37	*	0.29	
1	0	1,600	363	342	0.00		0.00	
					0.27		0.37	
					0.43		0.43	
					0.00		0.00	
					0.10		0.10	
ICU					0.80		0.90	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 100
North/South Roadway: Pacific Coast Hwy
East/West Roadway: 2nd St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	404	433	0.14		0.15	
NBT	3		4,800	1,166	958	0.31	*	0.27	*
NBR	0		0	323	316	0.00		0.00	
SBL	2		2,880	250	276	0.09	*	0.10	*
SBT	3		4,800	945	1,022	0.20		0.21	
SBR	1	0	1,600	172	428	0.00		0.00	
EBL	2		2,880	234	308	0.08		0.11	
EBT	2.5		4,000	1,269	1,129	0.32	*	0.28	*
EBR	1.5	0	2,400	427	307	0.00		0.00	
WBL	2		2,880	330	343	0.11	*	0.12	*
WBT	3		4,800	956	1,232	0.20		0.26	
WBR	1	0	1,600	316	347	0.00		0.00	
N/S Critical Movements						0.40		0.37	
E/W Critical Movements						0.43		0.40	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.93		0.87	
Level of Service (LOS)						E		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	467	537	0.16		0.19	*
3		4,800	1,348	1,107	0.36	*	0.31	
0		0	373	365	0.00		0.00	
2		2,880	289	319	0.10	*	0.11	
3		4,800	1,092	1,181	0.23		0.25	*
1	0	1,600	199	467	0.00		0.00	
2		2,880	290	333	0.10		0.12	
2.5		4,000	1,467	1,305	0.37	*	0.33	*
1.5	0	2,400	531	357	0.00		0.00	
2		2,880	381	396	0.13	*	0.14	*
3		4,800	1,105	1,424	0.23		0.30	
1	0	1,600	365	401	0.00		0.00	
					0.46		0.44	
					0.50		0.47	
					0.00		0.00	
					0.10		0.10	
ICU					1.06		1.01	
Level of Service (LOS)					F		F	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	412	553	0.14		0.19	*
NBT	3		4,800	1,348	1,107	0.36	*	0.31	
NBR	0		0	373	365	0.00		0.00	
SBL	2		2,880	289	319	0.10	*	0.11	
SBT	3		4,800	1,092	1,181	0.23		0.25	*
SBR	1	0	1,600	199	474	0.00		0.00	
EBL	2		2,880	304	319	0.11		0.11	
EBT	2.5		4,000	1,467	1,305	0.37	*	0.33	*
EBR	1.5	0	2,400	575	363	0.00		0.00	
WBL	2		2,880	381	396	0.13	*	0.14	*
WBT	3		4,800	1,105	1,424	0.23		0.30	
WBR	1	0	1,600	365	401	0.00		0.00	
N/S Critical Movements						0.46		0.44	
E/W Critical Movements						0.50		0.47	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						1.06		1.01	
Level of Service (LOS)						F		F	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
2		2,880	412	553	0.14		0.19	*
3		4,800	1,348	1,107	0.28	*	0.23	
1	0	1,600	373	365	0.00		0.00	
2		2,880	289	319	0.10	*	0.11	
3		4,800	1,092	1,181	0.23		0.25	*
1	0	1,600	199	474	0.00		0.00	
2		2,880	304	319	0.11		0.11	
4.0		6,400	1,467	1,305	0.23	*	0.20	*
1.0	0	1,600	575	363	0.00		0.00	
2		2,880	381	396	0.13	*	0.14	*
4		6,400	1,105	1,424	0.17		0.22	
1	0	1,600	365	401	0.00		0.00	
					0.38		0.44	
					0.36		0.34	
					0.00		0.00	
					0.10		0.10	
ICU					0.84		0.88	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 101
North/South Roadway 1st Street
East/West Roadway: Marina Drive
Scenario: 0

EXISTING CONDITION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	44	44	0.03	*	0.03	*
NBT	2		3,200	29	36	0.01		0.01	
NBR	1	0	1,600	10	4	0.00		0.00	
SBL	1		1,600	29	21	0.02		0.01	
SBT	2		3,200	9	13	0.00	*	0.00	*
SBR	1	0	1,600	11	23	0.00		0.00	
EBL	1		1,600	2	16	0.00	*	0.01	*
EBT	1		1,600	65	122	0.07		0.11	
EBR	0		0	40	60	0.00		0.00	
WBL	1		1,600	6	9	0.00		0.01	
WBT	1		1,600	89	146	0.09	*	0.13	*
WBR	0		0	60	61	0.00		0.00	
N/S Critical Movements						0.03		0.03	
E/W Critical Movements						0.09		0.14	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.22		0.27	
Level of Service (LOS)						A		A	

2040 NO BUILD

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	51	51	0.03	*	0.03	*
NBT	2		3,200	34	42	0.01		0.01	
NBR	1	0	1,600	12	5	0.00		0.00	
SBL	1		1,600	34	24	0.02		0.02	
SBT	2		3,200	10	15	0.00	*	0.00	*
SBR	1	0	1,600	13	27	0.00		0.00	
EBL	1		1,600	2	18	0.00	*	0.01	*
EBT	1		1,600	75	141	0.08		0.13	
EBR	0		0	46	69	0.00		0.00	
WBL	1		1,600	7	10	0.00		0.01	
WBT	1		1,600	103	169	0.11	*	0.15	*
WBR	0		0	69	71	0.00		0.00	
						0.03		0.03	
						0.11		0.16	
						0.00		0.00	
						0.10		0.10	
ICU						0.24		0.29	
Level of Service (LOS)						A		A	

PROPOSED LAND USE ELEMENT

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	51	51	0.03	*	0.03	*
NBT	2		3,200	34	42	0.01		0.01	
NBR	1	0	1,600	12	5	0.00		0.00	
SBL	1		1,600	34	24	0.02		0.02	
SBT	2		3,200	10	15	0.00	*	0.00	*
SBR	1	0	1,600	13	27	0.00		0.00	
EBL	1		1,600	2	18	0.00	*	0.01	*
EBT	1		1,600	75	141	0.08		0.13	
EBR	0		0	46	69	0.00		0.00	
WBL	1		1,600	7	10	0.00		0.01	
WBT	1		1,600	103	169	0.11	*	0.15	*
WBR	0		0	69	71	0.00		0.00	
N/S Critical Movements						0.03		0.03	
E/W Critical Movements						0.11		0.16	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.24		0.29	
Level of Service (LOS)						A		A	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Move-ment	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	51	51	0.03	*	0.03	*
NBT	2		3,200	34	42	0.01		0.01	
NBR	1	0	1,600	12	5	0.00		0.00	
SBL	1		1,600	34	24	0.02		0.02	
SBT	2		3,200	10	15	0.00	*	0.00	*
SBR	1	0	1,600	13	27	0.00		0.00	
EBL	1		1,600	2	18	0.00	*	0.01	*
EBT	1		1,600	75	141	0.08		0.13	
EBR	0		0	46	69	0.00		0.00	
WBL	1		1,600	7	10	0.00		0.01	
WBT	1		1,600	103	169	0.11	*	0.15	*
WBR	0		0	69	71	0.00		0.00	
						0.03		0.03	
						0.11		0.16	
						0.00		0.00	
						0.10		0.10	
ICU						0.24		0.29	
Level of Service (LOS)						A		A	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 102
North/South Roadway: Los Coyotes Diagonal
East/West Roadway: Spring Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	27	24	0.02	*	0.02	
NBT	2		3,200	500	868	0.16		0.27	*
NBR	1	0	1,600	212	155	0.00		0.00	
SBL	1		1,600	9	23	0.01		0.01	*
SBT	3		4,800	776	614	0.24	*	0.16	
SBR	0		0	359	160	0.00		0.00	
EBL	1		1,600	88	213	0.06	*	0.13	
EBT	3		4,800	499	1,238	0.11		0.26	*
EBR	0		0	9	27	0.00		0.00	
WBL	1		1,600	177	166	0.11		0.10	*
WBT	3		4,800	1,346	773	0.28	*	0.17	
WBR	0		0	14	29	0.00		0.00	
N/S Critical Movements						0.26		0.28	
E/W Critical Movements						0.34		0.36	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.70		0.74	
Level of Service (LOS)						B		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	27	28	0.02	*	0.02	
2		3,200	578	890	0.18		0.28	*
1	0	1,600	245	179	0.00		0.00	
1		1,600	9	27	0.01		0.02	*
3		4,800	777	619	0.24	*	0.17	
0		0	389	185	0.00		0.00	
1		1,600	102	246	0.06	*	0.15	
3		4,800	577	1,431	0.12		0.30	*
0		0	10	31	0.00		0.00	
1		1,600	205	192	0.13		0.12	*
3		4,800	1,556	893	0.33	*	0.19	
0		0	16	34	0.00		0.00	
					0.26		0.30	
					0.39		0.42	
					0.00		0.00	
					0.10		0.10	
ICU					0.75		0.82	
Level of Service (LOS)					C		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	28	28	0.02	*	0.02	
NBT	2		3,200	578	891	0.18		0.28	*
NBR	1	0	1,600	218	179	0.00		0.00	
SBL	1		1,600	10	27	0.01		0.02	*
SBT	3		4,800	779	631	0.25	*	0.17	
SBR	0		0	421	185	0.00		0.00	
EBL	1		1,600	102	223	0.06	*	0.14	
EBT	3		4,800	577	1,431	0.12		0.30	*
EBR	0		0	10	27	0.00		0.00	
WBL	1		1,600	205	192	0.13		0.12	*
WBT	3		4,800	1,556	893	0.33	*	0.19	
WBR	0		0	16	34	0.00		0.00	
N/S Critical Movements						0.27		0.30	
E/W Critical Movements						0.39		0.42	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.76		0.82	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	28	28	0.02	*	0.02	
2		3,200	578	891	0.18		0.28	*
1	0	1,600	218	179	0.00		0.00	
1		1,600	10	27	0.01		0.02	*
3		4,800	779	631	0.25	*	0.17	
0		0	421	185	0.00		0.00	
1		1,600	102	223	0.06	*	0.14	
3		4,800	577	1,431	0.12		0.30	*
0		0	10	27	0.00		0.00	
1		1,600	205	192	0.13		0.12	*
3		4,800	1,556	893	0.33	*	0.19	
0		0	16	34	0.00		0.00	
					0.27		0.30	
					0.39		0.42	
					0.00		0.00	
					0.10		0.10	
ICU					0.76		0.82	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 103
North/South Roadway: West Campus Drive
East/West Roadway: 7th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	0	0	0	0	0.00 *	0.00 *
NBR	0	0	0	0	0.00	0.00
SBL	2	2,400	20	291	0.01 *	0.12 *
SBT	0	0	0	0	0.00	0.00
SBR	1	0 800	35	102	0.00	0.00
EBL	1	1,600	103	130	0.06 *	0.08
EBT	3	4,800	2,555	2,404	0.53	0.50 *
EBR	0	0	0	0	0.00	0.00
WBL	0	0	0	0	0.00	0.00 *
WBT	3	4,800	2,388	1,647	0.55 *	0.37
WBR	0	0	245	151	0.00	0.00
N/S Critical Movements					0.01	0.12
E/W Critical Movements					0.61	0.50
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.72	0.72
Level of Service (LOS)					C	C

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	0	0	0	0	0.00 *	0.00 *
NBR	0	0	0	0	0.00	0.00
SBL	2	2,400	23	336	0.01 *	0.14 *
SBT	0	0	0	0	0.00	0.00
SBR	1	0 800	36	104	0.00	0.00
EBL	1	1,600	103	133	0.06 *	0.08
EBT	3	4,800	2,953	2,778	0.62	0.58 *
EBR	0	0	0	0	0.00	0.00
WBL	0	0	0	0	0.00	0.00 *
WBT	3	4,800	2,760	1,904	0.63 *	0.43
WBR	0	0	283	175	0.00	0.00
					0.01	0.14
					0.69	0.58
					0.00	0.00
					0.10	0.10
ICU					0.80	0.82
Level of Service (LOS)					C	D

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	0	0	0	0	0.00 *	0.00 *
NBR	0	0	0	0	0.00	0.00
SBL	2	2,400	23	336	0.01 *	0.14 *
SBT	0	0	0	0	0.00	0.00
SBR	1	0 800	36	103	0.00	0.00
EBL	1	1,600	119	134	0.07 *	0.08
EBT	3	4,800	2,953	2,778	0.62	0.58 *
EBR	0	0	0	0	0.00	0.00
WBL	0	0	0	0	0.00	0.00 *
WBT	3	4,800	2,760	1,904	0.63 *	0.43
WBR	0	0	283	175	0.00	0.00
N/S Critical Movements					0.01	0.14
E/W Critical Movements					0.70	0.58
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.81	0.82
Level of Service (LOS)					D	D

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	0	0	0	0	0.00 *	0.00 *
NBR	0	0	0	0	0.00	0.00
SBL	2	2,400	23	336	0.01 *	0.14 *
SBT	0	0	0	0	0.00	0.00
SBR	1	0 800	36	103	0.00	0.00
EBL	1	1,600	119	134	0.07 *	0.08
EBT	3	4,800	2,953	2,778	0.62	0.58 *
EBR	0	0	0	0	0.00	0.00
WBL	0	0	0	0	0.00	0.00 *
WBT	3	4,800	2,760	1,904	0.63 *	0.43
WBR	0	0	283	175	0.00	0.00
					0.01	0.14
					0.70	0.58
					0.00	0.00
					0.10	0.10
ICU					0.81	0.82
Level of Service (LOS)					D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 104
North/South Roadway: East Campus Road
East/West Roadway: 7th Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	55	15	0.03	0.01
NBT	1	1,600	36	34	0.07 *	0.04 *
NBR	0	0	15	22	0.00	0.00
SBL	1	1,600	22	150	0.01 *	0.09 *
SBT	1	1,600	14	52	0.04	0.09
SBR	0	0	43	99	0.00	0.00
EBL	1	1,600	70	77	0.04 *	0.05
EBT	3	4,800	2,442	2,597	0.51	0.54 *
EBR	1 0	1,600	46	33	0.00	0.00
WBL	1	1,600	45	49	0.03	0.03 *
WBT	3	4,800	2,556	1,657	0.55 *	0.36
WBR	0	0	96	88	0.00	0.00
N/S Critical Movements					0.08	0.13
E/W Critical Movements					0.59	0.57
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.77	0.80
Level of Service (LOS)					C	C

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
0	0	64	16	0.04	0.01
1	1,600	42	37	0.08 *	0.05 *
0	0	17	25	0.00	0.00
1	1,600	25	173	0.02 *	0.11 *
1	1,600	16	55	0.04	0.11
0	0	50	125	0.00	0.00
1	1,600	81	98	0.05 *	0.06
3	4,800	2,822	3,002	0.59	0.63 *
1 0	1,600	48	34	0.00	0.00
1	1,600	52	57	0.03	0.04 *
3	4,800	2,954	1,915	0.64 *	0.42
0	0	111	88	0.00	0.00
				0.10	0.16
				0.69	0.67
				0.00	0.00
				0.10	0.10
ICU				0.89	0.93
Level of Service (LOS)				D	E

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	64	16	0.04	0.01
NBT	1	1,600	42	34	0.08 *	0.05 *
NBR	0	0	17	25	0.00	0.00
SBL	1	1,600	25	173	0.02 *	0.11 *
SBT	1	1,600	16	60	0.04	0.10
SBR	0	0	50	102	0.00	0.00
EBL	1	1,600	81	89	0.05 *	0.06
EBT	3	4,800	2,822	3,002	0.59	0.63 *
EBR	1 0	1,600	47	38	0.00	0.00
WBL	1	1,600	45	57	0.03	0.04 *
WBT	3	4,800	2,954	1,915	0.64 *	0.42
WBR	0	0	111	102	0.00	0.00
N/S Critical Movements					0.10	0.16
E/W Critical Movements					0.69	0.67
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.89	0.93
Level of Service (LOS)					D	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
0	0	64	16	0.04	0.01
1	1,600	42	34	0.08 *	0.05 *
0	0	17	25	0.00	0.00
1	1,600	25	173	0.02 *	0.11 *
1	1,600	16	60	0.04	0.10
0	0	50	102	0.00	0.00
1	1,600	81	89	0.05 *	0.06
4	6,400	2,822	3,002	0.45	0.47 *
0	0	47	38	0.00	0.00
1	1,600	45	57	0.03	0.04 *
3	4,800	2,954	1,915	0.64 *	0.42
0	0	111	102	0.00	0.00
				0.10	0.16
				0.69	0.51
				0.00	0.00
				0.10	0.10
ICU				0.89	0.77
Level of Service (LOS)				D	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 105
North/South Roadway: Palo Verde Avenue
East/West Roadway: Wardlow Raod
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	88	86	0.06 *	0.05
NBT	2	3,200	239	527	0.09	0.22 *
NBR	0	0	54	165	0.00	0.00
SBL	1	1,600	110	89	0.07	0.06 *
SBT	2	3,200	341	285	0.11 *	0.09
SBR	0	0	3	14	0.00	0.00
EBL	1	1,600	7	13	0.00	0.01
EBT	3	4,800	558	946	0.14 *	0.21 *
EBR	0	0	111	83	0.00	0.00
WBL	1	1,600	143	102	0.09 *	0.06 *
WBT	3	4,800	924	703	0.21	0.17
WBR	0	0	65	93	0.00	0.00
N/S Critical Movements					0.17	0.28
E/W Critical Movements					0.23	0.27
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.50	0.65
Level of Service (LOS)					A	B

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	102	99	0.06 *	0.06
2	3,200	276	609	0.10	0.25 *
0	0	56	191	0.00	0.00
1	1,600	127	103	0.08	0.06 *
2	3,200	394	329	0.12 *	0.11
0	0	3	16	0.00	0.00
1	1,600	8	15	0.01	0.01
3	4,800	645	1,093	0.16 *	0.25 *
0	0	128	96	0.00	0.00
1	1,600	165	118	0.10 *	0.07 *
3	4,800	1,068	812	0.24	0.19
0	0	75	107	0.00	0.00
				0.18	0.31
				0.26	0.32
				0.00	0.00
				0.10	0.10
ICU				0.54	0.73
Level of Service (LOS)				A	C

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	102	99	0.06 *	0.06
NBT	2	3,200	276	609	0.10	0.25 *
NBR	0	0	55	191	0.00	0.00
SBL	1	1,600	127	103	0.08	0.06 *
SBT	2	3,200	394	329	0.12 *	0.11
SBR	0	0	3	16	0.00	0.00
EBL	1	1,600	8	15	0.01	0.01
EBT	3	4,800	645	1,093	0.16 *	0.25 *
EBR	0	0	128	96	0.00	0.00
WBL	1	1,600	165	118	0.10 *	0.07 *
WBT	3	4,800	1,068	812	0.24	0.19
WBR	0	0	75	107	0.00	0.00
N/S Critical Movements					0.18	0.31
E/W Critical Movements					0.26	0.32
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.54	0.73
Level of Service (LOS)					A	C

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	102	99	0.06 *	0.06
2	3,200	276	609	0.10	0.25 *
0	0	55	191	0.00	0.00
1	1,600	127	103	0.08	0.06 *
2	3,200	394	329	0.12 *	0.11
0	0	3	16	0.00	0.00
1	1,600	8	15	0.01	0.01
3	4,800	645	1,093	0.16 *	0.25 *
0	0	128	96	0.00	0.00
1	1,600	165	118	0.10 *	0.07 *
3	4,800	1,068	812	0.24	0.19
0	0	75	107	0.00	0.00
				0.18	0.31
				0.26	0.32
				0.00	0.00
				0.10	0.10
ICU				0.54	0.73
Level of Service (LOS)				A	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 106
North/South Roadway: Palo Verde Avenue
East/West Roadway: Anahiem Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	111	262	0.07	*	0.16	
NBT	2		3,200	228	731	0.08		0.25	*
NBR	0		0	18	82	0.00		0.00	
SBL	1		1,600	99	119	0.06		0.07	*
SBT	2		3,200	569	474	0.18	*	0.15	
SBR	1	0	1,600	322	266	0.00		0.00	
EBL	2		2,400	110	605	0.05	*	0.25	*
EBT	2		2,400	151	433	0.06		0.18	
EBR	1	0	1,600	152	222	0.00		0.00	
WBL	1		1,600	84	53	0.05		0.03	
WBT	2		3,200	350	262	0.11	*	0.08	*
WBR	1	0	1,600	81	75	0.00		0.00	
N/S Critical Movements						0.25		0.32	
E/W Critical Movements						0.16		0.33	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.51		0.75	
Level of Service (LOS)						A		C	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	128	303	0.08	*	0.19	
NBT	2		3,200	264	845	0.09		0.29	*
NBR	0		0	21	92	0.00		0.00	
SBL	1		1,600	114	138	0.07		0.09	*
SBT	2		3,200	658	548	0.21	*	0.17	
SBR	1	0	1,600	372	307	0.00		0.00	
EBL	2		2,400	127	699	0.05	*	0.29	*
EBT	2		2,400	175	441	0.07		0.18	
EBR	1	0	1,600	176	225	0.00		0.00	
WBL	1		1,600	111	61	0.07		0.04	
WBT	2		3,200	370	271	0.12	*	0.08	*
WBR	1	0	1,600	85	78	0.00		0.00	
						0.29		0.38	
						0.17		0.37	
						0.00		0.00	
						0.10		0.10	
ICU						0.56		0.85	
Level of Service (LOS)						A		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	128	263	0.08	*	0.16	
NBT	2		3,200	264	845	0.09		0.29	*
NBR	0		0	21	94	0.00		0.00	
SBL	1		1,600	114	119	0.07		0.07	*
SBT	2		3,200	658	548	0.21	*	0.17	
SBR	1	0	1,600	372	307	0.00		0.00	
EBL	2		2,400	127	699	0.05	*	0.29	*
EBT	2		2,400	175	460	0.07		0.19	
EBR	1	0	1,600	176	227	0.00		0.00	
WBL	1		1,600	113	63	0.07		0.04	
WBT	2		3,200	387	284	0.12	*	0.09	*
WBR	1	0	1,600	86	80	0.00		0.00	
N/S Critical Movements						0.29		0.36	
E/W Critical Movements						0.17		0.38	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.56		0.84	
Level of Service (LOS)						A		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	128	263	0.08	*	0.16	
2		3,200	264	845	0.09		0.29	*
0		0	21	94	0.00		0.00	
1		1,600	114	119	0.07		0.07	*
2		3,200	658	548	0.21	*	0.17	
1	0	1,600	372	307	0.00		0.00	
2		2,400	127	699	0.05	*	0.29	*
2		2,400	175	460	0.07		0.19	
1	0	1,600	176	227	0.00		0.00	
1		1,600	113	63	0.07		0.04	
2		3,200	387	284	0.12	*	0.09	*
1	0	1,600	86	80	0.00		0.00	
					0.29		0.36	
					0.17		0.38	
					0.00		0.00	
					0.10		0.10	
ICU					0.56		0.84	
Level of Service (LOS)					A		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 107
North/South Roadway: Los Coyotes Diagonal
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	253	351	0.16	*	0.22	*
NBT	1		1,600	73	214	0.05		0.13	
NBR	1	0	1,600	391	618	0.00		0.00	
SBL	1		1,600	101	101	0.06		0.06	
SBT	2		3,200	212	157	0.07	*	0.05	*
SBR	1	0	1,600	20	35	0.00		0.00	
EBL	1		1,600	12	33	0.01	*	0.02	
EBT	3		4,800	500	1,023	0.16		0.25	*
EBR	0		0	276	178	0.00		0.00	
WBL	2		2,880	498	447	0.17		0.16	*
WBT	2		3,200	1,130	1,006	0.37	*	0.34	
WBR	0		0	42	91	0.00		0.00	
N/S Critical Movements						0.23		0.27	
E/W Critical Movements						0.38		0.41	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.71		0.78	
Level of Service (LOS)						C		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	292	406	0.18	*	0.25	*
1		1,600	84	247	0.05		0.15	
1	0	1,600	452	714	0.00		0.00	
1		1,600	157	125	0.10		0.08	
2		3,200	220	181	0.07	*	0.06	*
1	0	1,600	23	41	0.00		0.00	
1		1,600	14	38	0.01	*	0.02	
3		4,800	513	1,182	0.17		0.29	*
0		0	319	206	0.00		0.00	
2		2,880	576	517	0.20		0.18	*
2		3,200	1,306	1,024	0.42	*	0.35	
0		0	48	98	0.00		0.00	
					0.25		0.31	
					0.43		0.47	
					0.00		0.00	
					0.10		0.10	
ICU					0.78		0.88	
Level of Service (LOS)					C		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	292	406	0.18	*	0.25	*
NBT	1		1,600	84	247	0.05		0.15	
NBR	1	0	1,600	452	714	0.00		0.00	
SBL	1		1,600	135	119	0.08		0.07	
SBT	2		3,200	245	181	0.08	*	0.06	*
SBR	1	0	1,600	23	39	0.00		0.00	
EBL	1		1,600	14	38	0.01	*	0.02	
EBT	3		4,800	503	1,182	0.17		0.29	*
EBR	0		0	319	206	0.00		0.00	
WBL	2		2,880	576	517	0.20		0.18	*
WBT	2		3,200	1,306	1,163	0.42	*	0.39	
WBR	0		0	51	92	0.00		0.00	
N/S Critical Movements						0.26		0.31	
E/W Critical Movements						0.43		0.47	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.79		0.88	
Level of Service (LOS)						C		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	292	406	0.18	*	0.25	*
1		1,600	84	247	0.05		0.15	
1	0	1,600	452	714	0.00		0.00	
1		1,600	135	119	0.08		0.07	
2		3,200	245	181	0.08	*	0.06	*
1	0	1,600	23	39	0.00		0.00	
1		1,600	14	38	0.01	*	0.02	
3		4,800	503	1,182	0.17		0.29	*
0		0	319	206	0.00		0.00	
2		2,880	576	517	0.20		0.18	*
2		3,200	1,306	1,163	0.42	*	0.39	
0		0	51	92	0.00		0.00	
					0.26		0.31	
					0.43		0.47	
					0.00		0.00	
					0.10		0.10	
ICU					0.79		0.88	
Level of Service (LOS)					C		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 108
North/South Roadway: Studebaker Road
East/West Roadway: Spring Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	93	193	0.06	*	0.12	
NBT	2		3,200	195	837	0.06		0.26	*
NBR	1	0	1,600	121	223	0.00		0.00	
SBL	1		1,600	69	61	0.04		0.04	*
SBT	3		4,800	418	462	0.10	*	0.12	
SBR	0		0	68	103	0.00		0.00	
EBL	1		1,600	50	198	0.03	*	0.12	
EBT	3		4,800	337	829	0.09		0.22	*
EBR	0		0	93	213	0.00		0.00	
WBL	1		1,600	185	271	0.12		0.17	*
WBT	3		4,800	824	753	0.18	*	0.18	
WBR	0		0	28	107	0.00		0.00	
N/S Critical Movements						0.16		0.30	
E/W Critical Movements						0.21		0.39	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.47		0.79	
Level of Service (LOS)						A		C	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	107	223	0.07	*	0.14	
2		3,200	225	967	0.07		0.30	*
1	0	1,600	140	256	0.00		0.00	
1		1,600	80	71	0.05		0.04	*
3		4,800	483	534	0.12	*	0.14	
0		0	79	119	0.00		0.00	
1		1,600	69	229	0.04	*	0.14	
3		4,800	389	958	0.10		0.25	*
0		0	103	246	0.00		0.00	
1		1,600	214	313	0.13		0.20	*
3		4,800	952	870	0.21	*	0.21	
0		0	34	124	0.00		0.00	
					0.19		0.34	
					0.25		0.45	
					0.00		0.00	
					0.10		0.10	
ICU					0.54		0.89	
Level of Service (LOS)					A		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	107	223	0.07	*	0.14	
NBT	2		3,200	225	967	0.07		0.30	*
NBR	1	0	1,600	140	241	0.00		0.00	
SBL	1		1,600	80	71	0.05		0.04	*
SBT	3		4,800	483	534	0.12	*	0.14	
SBR	0		0	74	119	0.00		0.00	
EBL	1		1,600	75	229	0.05	*	0.14	
EBT	3		4,800	389	958	0.10		0.25	*
EBR	0		0	102	246	0.00		0.00	
WBL	1		1,600	214	313	0.13		0.20	*
WBT	3		4,800	828	870	0.18	*	0.21	
WBR	0		0	29	124	0.00		0.00	
N/S Critical Movements						0.19		0.34	
E/W Critical Movements						0.23		0.45	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.52		0.89	
Level of Service (LOS)						A		D	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	107	223	0.07	*	0.14	
2		3,200	225	967	0.07		0.30	*
1	0	1,600	140	241	0.00		0.00	
1		1,600	80	71	0.05		0.04	*
3		4,800	483	534	0.12	*	0.14	
0		0	74	119	0.00		0.00	
1		1,600	75	229	0.05	*	0.14	
3		4,800	389	958	0.10		0.25	*
0		0	102	246	0.00		0.00	
1		1,600	214	313	0.13		0.20	*
3		4,800	828	870	0.18	*	0.21	
0		0	29	124	0.00		0.00	
					0.19		0.34	
					0.23		0.45	
					0.00		0.00	
					0.10		0.10	
ICU					0.52		0.89	
Level of Service (LOS)					A		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 109
North/South Roadway: Studebaker Road
East/West Roadway: Willow Street
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	80	118	0.05 *	0.07
NBT	3	4,800	520	867	0.16	0.24 *
NBR	0	0	233	306	0.00	0.00
SBL	1	1,600	145	147	0.09	0.09 *
SBT	3	4,800	852	651	0.21 *	0.15
SBR	0	0	133	91	0.00	0.00
EBL	1	1,600	89	191	0.06 *	0.12 *
EBT	3	4,800	410	902	0.10	0.21
EBR	0	0	57	102	0.00	0.00
WBL	1	1,600	240	290	0.15	0.18
WBT	3	4,800	1,575	1,248	0.35 *	0.32 *
WBR	0	0	110	304	0.00	0.00
N/S Critical Movements					0.26	0.33
E/W Critical Movements					0.41	0.44
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.77	0.87
Level of Service (LOS)					C	D

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	92	136	0.06 *	0.09
3	4,800	601	1,002	0.19	0.28 *
0	0	326	330	0.00	0.00
1	1,600	151	170	0.09	0.11 *
3	4,800	985	752	0.24 *	0.18
0	0	154	105	0.00	0.00
1	1,600	103	221	0.06 *	0.14 *
3	4,800	454	928	0.11	0.22
0	0	66	118	0.00	0.00
1	1,600	288	335	0.18	0.21
3	4,800	1,820	1,442	0.41 *	0.37 *
0	0	127	351	0.00	0.00
				0.30	0.39
				0.47	0.51
				0.00	0.00
				0.10	0.10
ICU				0.87	1.00
Level of Service (LOS)				D	E

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	92	136	0.06 *	0.09
NBT	3	4,800	601	1,002	0.20	0.28 *
NBR	0	0	337	325	0.00	0.00
SBL	1	1,600	158	148	0.10	0.09 *
SBT	3	4,800	985	752	0.24 *	0.18
SBR	0	0	154	105	0.00	0.00
EBL	1	1,600	103	221	0.06 *	0.14 *
EBT	3	4,800	474	1,007	0.11	0.23
EBR	0	0	66	118	0.00	0.00
WBL	1	1,600	283	335	0.18	0.21
WBT	3	4,800	1,820	1,442	0.41 *	0.37 *
WBR	0	0	127	351	0.00	0.00
N/S Critical Movements					0.30	0.37
E/W Critical Movements					0.47	0.51
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.87	0.98
Level of Service (LOS)					D	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	92	136	0.06 *	0.09
3	4,800	601	1,002	0.13	0.21 *
1 0	1,600	337	325	0.00	0.00
1	1,600	158	148	0.10	0.09 *
3	4,800	985	752	0.24 *	0.18
0	0	154	105	0.00	0.00
1	1,600	103	221	0.06 *	0.14 *
3	4,800	474	1,007	0.11	0.23
0	0	66	118	0.00	0.00
1	1,600	283	335	0.18	0.21
3	4,800	1,820	1,442	0.38 *	0.30 *
1 0	1,600	127	351	0.00	0.00
				0.30	0.30
				0.44	0.44
				0.00	0.00
				0.10	0.10
ICU				0.84	0.84
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 110
North/South Roadway: 7th Street
East/West Roadway: College Park Drive
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	1	1,600	979	1,351	0.64 *	0.88 *
NBR	0	0	42	58	0.00	0.00
SBL	1	1,600	24	48	0.02 *	0.03 *
SBT	1	1,600	38	43	0.02	0.03
SBR	0	0	0	0	0.00	0.00
EBL	0	0	0	0	0.00	0.00 *
EBT	0	0	0	0	0.00 *	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	9	3	0.01 *	0.00
WBT	0	0	0	0	0.00	0.00 *
WBR	1 0	1,600	96	97	0.00	0.00
N/S Critical Movements					0.66	0.91
E/W Critical Movements					0.01	0.00
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.77	1.01
Level of Service (LOS)					C	F

2040 NO BUILD

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	1	1,600	1,131	1,561	0.73 *	1.01 *
NBR	0	0	42	58	0.00	0.00
SBL	1	1,600	24	48	0.02 *	0.03 *
SBT	1	1,600	38	43	0.02	0.03
SBR	0	0	0	0	0.00	0.00
EBL	0	0	0	0	0.00	0.00 *
EBT	0	0	0	0	0.00 *	0.00
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	9	3	0.01 *	0.00
WBT	0	0	0	0	0.00	0.00 *
WBR	1 0	1,600	96	97	0.00	0.00
					0.75	1.04
					0.01	0.00
					0.00	0.00
					0.10	0.10
ICU					0.86	1.14
Level of Service (LOS)					D	F

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	1	1,600	1,000	1,561	0.65 *	1.04 *
NBR	0	0	42	106	0.00	0.00
SBL	1	1,600	24	55	0.02 *	0.03 *
SBT	1	1,600	38	158	0.02	0.10
SBR	0	0	0	0	0.00	0.00
EBL	0	0	0	0	0.00	0.00
EBT	0	0	0	0	0.00 *	0.00 *
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	9	168	0.01 *	0.11 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	96	112	0.00	0.00
N/S Critical Movements					0.67	1.07
E/W Critical Movements					0.01	0.11
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.78	1.28
Level of Service (LOS)					C	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0	0	0	0	0.00	0.00
NBT	2	3,200	1,000	1,561	0.33 *	0.52 *
NBR	0	0	42	106	0.00	0.00
SBL	1	1,600	24	55	0.02 *	0.03 *
SBT	1	1,600	38	158	0.02	0.10
SBR	0	0	0	0	0.00	0.00
EBL	0	0	0	0	0.00	0.00
EBT	0	0	0	0	0.00 *	0.00 *
EBR	0	0	0	0	0.00	0.00
WBL	1	1,600	9	168	0.01 *	0.11 *
WBT	0	0	0	0	0.00	0.00
WBR	1 0	1,600	96	112	0.00	0.00
					0.35	0.55
					0.01	0.11
					0.00	0.00
					0.10	0.10
ICU					0.46	0.76
Level of Service (LOS)					A	C

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 111
North/South Roadway: Studebaker Rd
East/West Roadway: 2nd St
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00
NBT	0		0	0	0	0.00 *	0.00 *
NBR	0		0	0	0	0.00	0.00
SBL	2		2,880	549	437	0.19 *	0.15 *
SBT	0		0	0	0	0.00	0.00
SBR	2	0	3,200	688	961	0.00	0.00
EBL	2		2,880	963	1,172	0.33 *	0.41 *
EBT	2		3,200	906	818	0.28	0.26
EBR	0		0	0	0	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	3		4,800	979	1,058	0.20 *	0.22 *
WBR	1	0	1,600	502	664	0.00	0.00
N/S Critical Movements						0.19	0.15
E/W Critical Movements						0.53	0.63
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.82	0.88
Level of Service (LOS)						D	D

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00
NBT	0		0	0	0	0.00 *	0.00 *
NBR	0		0	0	0	0.00	0.00
SBL	2		2,880	635	640	0.22 *	0.22 *
SBT	0		0	0	0	0.00	0.00
SBR	2	0	3,200	795	1,111	0.00	0.00
EBL	2		2,880	1,113	1,355	0.39 *	0.47 *
EBT	2		3,200	1,047	1,400	0.33	0.44
EBR	0		0	0	0	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	3		4,800	1,131	1,561	0.24 *	0.33 *
WBR	1	0	1,600	580	767	0.00	0.00
						0.22	0.22
						0.63	0.80
						0.00	0.00
						0.10	0.10
ICU						0.95	1.12
Level of Service (LOS)						E	F

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00
NBT	0		0	0	0	0.00 *	0.00 *
NBR	0		0	0	0	0.00	0.00
SBL	2		2,880	635	505	0.22 *	0.18 *
SBT	0		0	0	0	0.00	0.00
SBR	2	0	3,200	795	1,111	0.00	0.00
EBL	2		2,880	1,113	1,355	0.39 *	0.47 *
EBT	2		3,200	1,047	945	0.33	0.30
EBR	0		0	0	0	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	3		4,800	1,131	1,223	0.24 *	0.25 *
WBR	1	0	1,600	580	767	0.00	0.00
N/S Critical Movements						0.22	0.18
E/W Critical Movements						0.63	0.72
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.95	1.00
Level of Service (LOS)						E	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	0		0	0	0	0.00	0.00
NBT	0		0	0	0	0.00 *	0.00 *
NBR	0		0	0	0	0.00	0.00
SBL	2		2,880	635	505	0.22 *	0.18 *
SBT	0		0	0	0	0.00	0.00
SBR	2	0	3,200	795	1,111	0.00	0.00
EBL	3		4,800	1,113	1,355	0.23 *	0.28 *
EBT	2		3,200	1,047	945	0.33	0.30
EBR	0		0	0	0	0.00	0.00
WBL	0		0	0	0	0.00	0.00
WBT	3		4,800	1,131	1,223	0.24 *	0.25 *
WBR	1	0	1,600	580	767	0.00	0.00
						0.22	0.18
						0.47	0.53
						0.00	0.00
						0.10	0.10
ICU						0.79	0.81
Level of Service (LOS)						C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 112
North/South Roadway: I-605 SB Ramps
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	0		0	0	0	0.00	*	0.00	*
NBR	1	0	1,600	79	461	0.00		0.00	
SBL	2		2,880	472	869	0.16	*	0.30	*
SBT	2		2,400	92	235	0.04		0.10	
SBR	2	0	2,400	696	607	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	
EBT	4		6,400	939	1,605	0.16		0.28	*
EBR	0		0	80	160	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	3		4,800	1,077	1,015	0.30	*	0.26	
WBR	0		0	366	229	0.00		0.00	
N/S Critical Movements						0.16		0.30	
E/W Critical Movements						0.30		0.28	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.56		0.68	
Level of Service (LOS)						A		B	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	0		0	0	0	0.00	*	0.00	*
NBR	1	0	1,600	91	786	0.00		0.00	
SBL	2		2,880	546	1,004	0.19	*	0.35	*
SBT	2		2,400	96	272	0.04		0.11	
SBR	2	0	2,400	804	702	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	*
EBT	4		6,400	1,085	1,833	0.19		0.32	
EBR	0		0	132	228	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	
WBT	3		4,800	1,245	1,533	0.35	*	0.44	*
WBR	0		0	436	562	0.00		0.00	
						0.19		0.35	
						0.35		0.44	
						0.00		0.00	
						0.10		0.10	
ICU						0.64		0.89	
Level of Service (LOS)						B		D	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	0		0	0	0	0.00		0.00	
NBT	0		0	0	0	0.00	*	0.00	*
NBR	1	0	1,600	91	533	0.00		0.00	
SBL	2		2,880	546	1,004	0.19	*	0.35	*
SBT	2		2,400	98	272	0.04		0.11	
SBR	2	0	2,400	804	702	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	
EBT	4		6,400	1,085	1,855	0.19		0.33	*
EBR	0		0	134	255	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	3		4,800	1,245	1,019	0.35	*	0.27	
WBR	0		0	449	298	0.00		0.00	
N/S Critical Movements						0.19		0.35	
E/W Critical Movements						0.35		0.33	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.64		0.78	
Level of Service (LOS)						B		C	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
0		0	0	0	0.00		0.00	
0		0	0	0	0.00	*	0.00	*
1	0	1,600	91	533	0.00		0.00	
2		2,880	546	1,004	0.19	*	0.35	*
2		2,400	98	272	0.04		0.11	
2	0	2,400	804	702	0.00		0.00	
0		0	0	0	0.00	*	0.00	
4		6,400	1,085	1,855	0.19		0.33	*
0		0	134	255	0.00		0.00	
0		0	0	0	0.00		0.00	*
3		4,800	1,245	1,019	0.35	*	0.27	
0		0	449	298	0.00		0.00	
					0.19		0.35	
					0.35		0.33	
					0.00		0.00	
					0.10		0.10	
ICU					0.64		0.78	
Level of Service (LOS)					B		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 113
North/South Roadway: I-605 NB Ramps
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	269	299	0.09	*	0.10	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	315	478	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	
SBT	0		0	0	0	0.00	*	0.00	*
SBR	0		0	0	0	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	
EBT	4		6,400	1,258	2,566	0.20		0.40	*
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	2		3,200	1,175	1,020	0.37	*	0.32	
WBR	1	0	1,600	813	664	0.00		0.00	
N/S Critical Movements						0.09		0.10	
E/W Critical Movements						0.37		0.40	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.56		0.60	
Level of Service (LOS)						A		A	

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	459	524	0.16	*	0.18	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	364	552	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	
SBT	0		0	0	0	0.00	*	0.00	*
SBR	0		0	0	0	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	
EBT	4		6,400	1,454	2,966	0.23		0.46	*
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	2		3,200	1,358	1,179	0.42	*	0.37	
WBR	1	0	1,600	940	767	0.00		0.00	
						0.16		0.18	
						0.42		0.46	
						0.00		0.00	
						0.10		0.10	
ICU						0.68		0.74	
Level of Service (LOS)						B		C	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	482	518	0.17	*	0.18	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	364	480	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	
SBT	0		0	0	0	0.00	*	0.00	*
SBR	0		0	0	0	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	
EBT	4		6,400	1,454	2,966	0.23		0.46	*
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	2		3,200	1,358	1,179	0.42	*	0.37	
WBR	1	0	1,600	940	767	0.00		0.00	
N/S Critical Movements						0.17		0.18	
E/W Critical Movements						0.42		0.46	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.69		0.74	
Level of Service (LOS)						B		C	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	2		2,880	482	518	0.17	*	0.18	*
NBT	0		0	0	0	0.00		0.00	
NBR	2	0	3,200	364	480	0.00		0.00	
SBL	0		0	0	0	0.00		0.00	
SBT	0		0	0	0	0.00	*	0.00	*
SBR	0		0	0	0	0.00		0.00	
EBL	0		0	0	0	0.00	*	0.00	
EBT	4		6,400	1,454	2,966	0.23		0.46	*
EBR	0		0	0	0	0.00		0.00	
WBL	0		0	0	0	0.00		0.00	*
WBT	2		3,200	1,358	1,179	0.42	*	0.37	
WBR	1	0	1,600	940	767	0.00		0.00	
						0.17		0.18	
						0.42		0.46	
						0.00		0.00	
						0.10		0.10	
ICU						0.69		0.74	
Level of Service (LOS)						B		C	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 114
North/South Roadway: Norwalk Boulevard
East/West Roadway: Carson Street
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	209	217	0.13	*	0.14	*
NBT	2		3,200	467	663	0.15		0.21	
NBR	1	0	1,600	120	164	0.00		0.00	
SBL	1		1,600	107	143	0.07		0.09	
SBT	2		3,200	472	437	0.19	*	0.17	*
SBR	0		0	120	109	0.00		0.00	
EBL	1		1,600	67	184	0.04	*	0.12	
EBT	2		3,200	602	915	0.19		0.29	*
EBR	1	0	1,600	154	192	0.00		0.00	
WBL	1		1,600	129	205	0.08		0.13	*
WBT	2		3,200	996	697	0.31	*	0.22	
WBR	1	0	1,600	64	112	0.00		0.00	
N/S Critical Movements						0.32		0.31	
E/W Critical Movements						0.35		0.42	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.77		0.83	
Level of Service (LOS)						C		D	

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	242	251	0.15	*	0.16	*
2		3,200	540	766	0.17		0.24	
1	0	1,600	128	190	0.00		0.00	
1		1,600	124	165	0.08		0.10	
2		3,200	546	505	0.21	*	0.20	*
0		0	139	126	0.00		0.00	
1		1,600	77	213	0.05	*	0.13	
2		3,200	607	1,058	0.19		0.33	*
1	0	1,600	178	209	0.00		0.00	
1		1,600	149	237	0.09		0.15	*
2		3,200	1,151	806	0.36	*	0.25	
1	0	1,600	74	129	0.00		0.00	
					0.36		0.36	
					0.41		0.48	
					0.00		0.00	
					0.10		0.10	
ICU					0.87		0.94	
Level of Service (LOS)					D		E	

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
NBL	1		1,600	242	251	0.15	*	0.16	*
NBT	2		3,200	540	766	0.17		0.24	
NBR	1	0	1,600	123	190	0.00		0.00	
SBL	1		1,600	108	165	0.07		0.10	
SBT	2		3,200	546	505	0.21	*	0.20	*
SBR	0		0	139	126	0.00		0.00	
EBL	1		1,600	77	213	0.05	*	0.13	
EBT	2		3,200	607	1,058	0.19		0.33	*
EBR	1	0	1,600	178	204	0.00		0.00	
WBL	1		1,600	134	237	0.08		0.15	*
WBT	2		3,200	1,151	806	0.36	*	0.25	
WBR	1	0	1,600	74	129	0.00		0.00	
N/S Critical Movements						0.36		0.36	
E/W Critical Movements						0.41		0.48	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.87		0.94	
Level of Service (LOS)						D		E	

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM		V/C Ratio Wkday. PM	
1		1,600	242	251	0.15	*	0.16	*
2		3,200	540	766	0.17		0.24	
1	0	1,600	123	190	0.00		0.00	
1		1,600	108	165	0.07		0.10	
2		3,200	546	505	0.21	*	0.20	*
0		0	139	126	0.00		0.00	
1		1,600	77	213	0.05	*	0.13	
3		4,800	607	1,058	0.16		0.26	*
0		0	178	204	0.00		0.00	
1		1,600	134	237	0.08		0.15	*
2		3,200	1,151	806	0.36	*	0.25	
1	0	1,600	74	129	0.00		0.00	
					0.36		0.36	
					0.41		0.41	
					0.00		0.00	
					0.10		0.10	
ICU					0.87		0.87	
Level of Service (LOS)					D		D	

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 115
North/South Roadway: Norwalk Boulevard
East/West Roadway: Cerritos Avenue
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	155	263	0.05	0.09
NBT	3		4,800	629	912	0.20 *	0.27 *
NBR	0		0	324	371	0.00	0.00
SBL	1		1,600	109	105	0.07 *	0.07 *
SBT	3		4,800	820	663	0.19	0.15
SBR	0		0	86	79	0.00	0.00
EBL	1		1,600	120	177	0.08	0.11
EBT	2		3,200	853	896	0.27 *	0.28 *
EBR	1	0	1,600	141	219	0.00	0.00
WBL	1		1,600	231	288	0.14 *	0.18 *
WBT	2		3,200	820	944	0.26	0.30
WBR	1	0	1,600	144	155	0.00	0.00
N/S Critical Movements						0.27	0.34
E/W Critical Movements						0.41	0.46
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.78	0.90
Level of Service (LOS)						C	D

2040 NO BUILD

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
2		2,880	179	304	0.06	0.11
3		4,800	727	1,054	0.23 *	0.31 *
0		0	374	429	0.00	0.00
1		1,600	115	121	0.07 *	0.08 *
3		4,800	853	766	0.20	0.18
0		0	99	91	0.00	0.00
1		1,600	139	205	0.09	0.13
2		3,200	986	1,036	0.31 *	0.32 *
1	0	1,600	163	253	0.00	0.00
1		1,600	267	333	0.17 *	0.21 *
2		3,200	948	1,091	0.30	0.34
1	0	1,600	166	171	0.00	0.00
					0.30	0.39
					0.48	0.53
					0.00	0.00
					0.10	0.10
ICU					0.88	1.02
Level of Service (LOS)					D	F

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	179	304	0.06	0.11
NBT	3		4,800	636	1,054	0.20 *	0.31 *
NBR	0		0	325	429	0.00	0.00
SBL	1		1,600	119	121	0.07 *	0.08 *
SBT	3		4,800	844	766	0.20	0.18
SBR	0		0	99	91	0.00	0.00
EBL	1		1,600	139	205	0.09	0.13
EBT	2		3,200	986	1,036	0.31 *	0.32 *
EBR	1	0	1,600	163	253	0.00	0.00
WBL	1		1,600	267	333	0.17 *	0.21 *
WBT	2		3,200	948	1,091	0.30	0.34
WBR	1	0	1,600	166	173	0.00	0.00
N/S Critical Movements						0.27	0.39
E/W Critical Movements						0.48	0.53
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.85	1.02
Level of Service (LOS)						D	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
2		2,880	179	304	0.06 *	0.11
3		4,800	636	1,054	0.13	0.22 *
1	0	1,600	325	429	0.00	0.00
1		1,600	119	121	0.07	0.08 *
3		4,800	844	766	0.20 *	0.18
0		0	99	91	0.00	0.00
1		1,600	139	205	0.09	0.13
3		4,800	986	1,036	0.24 *	0.27 *
0		0	163	253	0.00	0.00
1		1,600	267	333	0.17 *	0.21 *
2		3,200	948	1,091	0.30	0.34
1	0	1,600	166	173	0.00	0.00
					0.26	0.30
					0.41	0.48
					0.00	0.00
					0.10	0.10
ICU					0.77	0.88
Level of Service (LOS)					C	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 116
North/South Roadway: Los Alamitos Boulevard
East/West Roadway: Katella Avenue
Scenario: 0

EXISTING CONDITION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	461	428	0.16 *	0.15 *
NBT	3		4,800	987	931	0.21	0.19
NBR	1	0	1,600	448	368	0.00	0.00
SBL	2		2,880	190	143	0.07	0.05
SBT	3		4,800	852	1,021	0.18 *	0.21 *
SBR	1	0	1,600	178	177	0.00	0.00
EBL	2		2,880	184	275	0.06	0.10 *
EBT	3		4,800	1,644	1,397	0.34 *	0.29
EBR	1	0	1,600	248	505	0.00	0.00
WBL	2		2,880	294	337	0.10 *	0.12
WBT	3		4,800	1,258	1,550	0.26	0.32 *
WBR	1	0	1,600	91	115	0.00	0.00
N/S Critical Movements						0.34	0.36
E/W Critical Movements						0.44	0.42
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.88	0.88
Level of Service (LOS)						D	D

2040 NO BUILD

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	533	495	0.19 *	0.17 *
NBT	3		4,800	1,141	1,076	0.24	0.22
NBR	1	0	1,600	518	425	0.00	0.00
SBL	2		2,880	453	204	0.16	0.07
SBT	3		4,800	985	1,180	0.21 *	0.25 *
SBR	1	0	1,600	206	205	0.00	0.00
EBL	2		2,880	213	318	0.07	0.11 *
EBT	3		4,800	1,900	1,615	0.40 *	0.34
EBR	1	0	1,600	287	584	0.00	0.00
WBL	2		2,880	340	389	0.12 *	0.14
WBT	3		4,800	1,454	1,791	0.30	0.37 *
WBR	1	0	1,600	254	161	0.00	0.00
						0.40	0.42
						0.52	0.48
						0.00	0.00
						0.10	0.10
ICU						1.02	1.00
Level of Service (LOS)						F	E

PROPOSED LAND USE ELEMENT

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	533	495	0.19	0.17 *
NBT	3		4,800	1,141	1,076	0.24 *	0.22
NBR	1	0	1,600	518	425	0.00	0.00
SBL	2		2,880	502	220	0.17 *	0.08
SBT	3		4,800	985	1,180	0.21	0.25 *
SBR	1	0	1,600	206	205	0.00	0.00
EBL	2		2,880	213	318	0.07	0.11 *
EBT	3		4,800	1,900	1,615	0.40 *	0.34
EBR	1	0	1,600	287	584	0.00	0.00
WBL	2		2,880	340	389	0.12 *	0.14
WBT	3		4,800	1,454	1,791	0.30	0.37 *
WBR	1	0	1,600	297	173	0.00	0.00
N/S Critical Movements						0.41	0.42
E/W Critical Movements						0.52	0.48
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						1.03	1.00
Level of Service (LOS)						F	E

PROPOSED LAND USE ELEMENT w/ MITIGATION

Movement	Lane		Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	2		2,880	533	495	0.19 *	0.17 *
NBT	4		6,400	1,141	1,076	0.18	0.17
NBR	1	0	1,600	518	425	0.00	0.00
SBL	2		2,880	502	220	0.17	0.08
SBT	4		6,400	985	1,180	0.19 *	0.22 *
SBR	0		0	206	205	0.00	0.00
EBL	2		2,880	213	318	0.07	0.11 *
EBT	4		6,400	1,900	1,615	0.30 *	0.25
EBR	1	0	1,600	287	584	0.00	0.00
WBL	2		2,880	340	389	0.12 *	0.14
WBT	4		6,400	1,454	1,791	0.23	0.28 *
WBR	1	0	1,600	297	173	0.00	0.00
						0.38	0.39
						0.42	0.39
						0.00	0.00
						0.10	0.10
ICU						0.90	0.88
Level of Service (LOS)						D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 117
North/South Roadway: Seal Beach Boulevard
East/West Roadway: Westminster Road
Scenario: 0

EXISTING CONDITION

Movement	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	62	113	0.04	0.07
NBT	3	4,800	747	900	0.19 *	0.23 *
NBR	0	0	146	220	0.00	0.00
SBL	2	2,880	207	230	0.07 *	0.08 *
SBT	3	4,800	1,029	734	0.21	0.15
SBR	1 0	1,600	380	263	0.00	0.00
EBL	2	2,880	185	444	0.06 *	0.15 *
EBT	3	4,800	579	925	0.13	0.20
EBR	0	0	26	34	0.00	0.00
WBL	2	2,880	288	301	0.10	0.10
WBT	2	3,200	1,039	927	0.38 *	0.37 *
WBR	0	0	178	269	0.00	0.00
N/S Critical Movements					0.26	0.31
E/W Critical Movements					0.44	0.52
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.80	0.93
Level of Service (LOS)					C	E

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	141	133	0.09 *	0.08
3	4,800	863	1,000	0.22	0.26 *
0	0	210	237	0.00	0.00
2	2,880	239	266	0.08	0.09 *
3	4,800	1,189	864	0.25 *	0.18
1 0	1,600	439	304	0.00	0.00
2	2,880	214	513	0.07 *	0.18 *
3	4,800	669	1,069	0.15	0.23
0	0	49	39	0.00	0.00
2	2,880	331	314	0.11	0.11
2	3,200	1,201	1,071	0.44 *	0.43 *
0	0	206	311	0.00	0.00
				0.34	0.35
				0.51	0.61
				0.00	0.00
				0.10	0.10
ICU				0.95	1.06
Level of Service (LOS)				E	F

PROPOSED LAND USE ELEMENT

Movement	Lane	Cap.	Volume Wkday. PM	Volume Wkend. PM	V/C Ratio Wkday. PM	V/C Ratio Wkend. PM
NBL	1	1,600	168	135	0.11 *	0.08
NBT	3	4,800	863	1,022	0.23	0.26 *
NBR	0	0	232	236	0.00	0.00
SBL	2	2,880	239	266	0.08	0.09 *
SBT	3	4,800	1,189	854	0.25 *	0.18
SBR	1 0	1,600	439	304	0.00	0.00
EBL	2	2,880	214	513	0.07 *	0.18 *
EBT	3	4,800	669	1,069	0.15	0.23
EBR	0	0	45	42	0.00	0.00
WBL	2	2,880	336	312	0.12	0.11
WBT	2	3,200	1,201	1,071	0.44 *	0.43 *
WBR	0	0	206	311	0.00	0.00
N/S Critical Movements					0.36	0.35
E/W Critical Movements					0.51	0.61
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.97	1.06
Level of Service (LOS)					E	F

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. PM	Volume Wkend. PM	V/C Ratio Wkday. PM	V/C Ratio Wkend. PM
1	1,600	168	135	0.11 *	0.08
4	6,400	863	1,022	0.17	0.20 *
0	0	232	236	0.00	0.00
2	2,880	239	266	0.08	0.09 *
3	4,800	1,189	854	0.25 *	0.18
1 0	1,600	439	304	0.00	0.00
2	2,880	214	513	0.07 *	0.18 *
3	4,800	669	1,069	0.15	0.23
0	0	45	42	0.00	0.00
2	2,880	336	312	0.12	0.11
3	4,800	1,201	1,071	0.29 *	0.29 *
0	0	206	311	0.00	0.00
				0.36	0.29
				0.36	0.47
				0.00	0.00
				0.10	0.10
ICU				0.82	0.86
Level of Service (LOS)				D	D

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Intersection Capacity Utilization Analysis

Intersection Number: 118
North/South Roadway: Atlantic Avenue
East/West Roadway: I-405 WB Ramps
Scenario: 0

EXISTING CONDITION

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	0	0	0.00 *	0.00
NBT	3	4,800	647	1,103	0.18	0.29 *
NBR	0	0	220	289	0.00	0.00
SBL	1	1,600	0	0	0.00	0.00 *
SBT	3	4,800	1,022	900	0.21 *	0.19
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	0	0	0.00	0.00 *
EBT	3	4,800	0	0	0.06 *	0.05
EBR	0	0	270	244	0.00	0.00
WBL	1	1,600	0	0	0.00 *	0.00
WBT	3	4,800	0	0	0.04	0.09 *
WBR	0	0	194	422	0.00	0.00
N/S Critical Movements					0.21	0.29
E/W Critical Movements					0.06	0.09
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.37	0.48
Level of Service (LOS)					A	A

2040 NO BUILD

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	0	0	0.00 *	0.00
3	4,800	704	1,107	0.20	0.30 *
0	0	254	310	0.00	0.00
1	1,600	0	0	0.00	0.00 *
3	4,800	1,052	1,040	0.22 *	0.22
0	0	0	0	0.00	0.00
1	1,600	0	0	0.00	0.00 *
3	4,800	0	0	0.06 *	0.05
0	0	270	244	0.00	0.00
1	1,600	0	0	0.00 *	0.00
3	4,800	0	0	0.05	0.10 *
0	0	224	488	0.00	0.00
				0.22	0.30
				0.06	0.10
				0.00	0.00
				0.10	0.10
ICU				0.38	0.50
Level of Service (LOS)				A	A

PROPOSED LAND USE ELEMENT

Move-ment	Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
NBL	1	1,600	0	0	0.00 *	0.00
NBT	3	4,800	685	1,164	0.20	0.31 *
NBR	0	0	254	315	0.00	0.00
SBL	1	1,600	0	0	0.00	0.00 *
SBT	3	4,800	1,123	1,040	0.23 *	0.22
SBR	0	0	0	0	0.00	0.00
EBL	1	1,600	0	0	0.00	0.00 *
EBT	3	4,800	0	0	0.06 *	0.05
EBR	0	0	270	244	0.00	0.00
WBL	1	1,600	0	0	0.00 *	0.00
WBT	3	4,800	0	0	0.05	0.10 *
WBR	0	0	224	488	0.00	0.00
N/S Critical Movements					0.23	0.31
E/W Critical Movements					0.06	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.39	0.51
Level of Service (LOS)					A	A

PROPOSED LAND USE ELEMENT w/ MITIGATION

Lane	Cap.	Volume Wkday. AM	Volume Wkday. PM	V/C Ratio Wkday. AM	V/C Ratio Wkday. PM
1	1,600	0	0	0.00 *	0.00
3	4,800	685	1,164	0.20	0.31 *
0	0	254	315	0.00	0.00
1	1,600	0	0	0.00	0.00 *
3	4,800	1,123	1,040	0.23 *	0.22
0	0	0	0	0.00	0.00
1	1,600	0	0	0.00	0.00 *
3	4,800	0	0	0.06 *	0.05
0	0	270	244	0.00	0.00
1	1,600	0	0	0.00 *	0.00
3	4,800	0	0	0.05	0.10 *
0	0	224	488	0.00	0.00
				0.23	0.31
				0.06	0.10
				0.00	0.00
				0.10	0.10
ICU				0.39	0.51
Level of Service (LOS)				A	A

Right Turn Conditions:

P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

APPENDIX C

CALTRANS FACILITY ANALYSIS WORKSHEETS

This page intentionally left blank

APPENDIX C

CALTRANS FACILITY ANALYSIS WORKSHEETS

Merge/Diverge Analysis Worksheets

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	SR-91: Atlantic Ave On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10141	571
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	11151	628
Capacity (c), pc/h	11750	2100
Volume-to-Capacity Ratio (v/c)	1.00	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.482
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2596
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.139	Outer Lanes Freeway Speed (SO), mi/h	56.7
Flow in Lanes 1 and 2 (v12), pc/h	3460	Ramp Junction Speed (S), mi/h	55.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	4088	Average Density (D), pc/mi/ln	42.5
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	SR-91: Atlantic Ave On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10080	700
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	11084	770
Capacity (c), pc/h	11750	2100
Volume-to-Capacity Ratio (v/c)	1.01	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	33.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2575
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.122	Outer Lanes Freeway Speed (SO), mi/h	56.8
Flow in Lanes 1 and 2 (v12), pc/h	3434	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4204	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	SR-91: Atlantic Ave On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11723	615
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	12890	676
Capacity (c), pc/h	11750	2100
Volume-to-Capacity Ratio (v/c)	1.15	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	44.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	33.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.133	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4990	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5666	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	SR-91 EB: Atlantic Ave On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11652	792
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	1.000
Flow Rate (vi),pc/h	12812	808
Capacity (c), pc/h	11750	2100
Volume-to-Capacity Ratio (v/c)	1.16	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	44.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	31.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.117	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4912	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5720	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	SR-91 EB: Atlantic Ave On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11723	620
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	1.000
Flow Rate (vi),pc/h	12890	633
Capacity (c), pc/h	11750	2100
Volume-to-Capacity Ratio (v/c)	1.15	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	44.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	34.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.139	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4990	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5623	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	SR-91 EB: Atlantic Ave On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11652	817
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	1.000
Flow Rate (vi),pc/h	12812	834
Capacity (c), pc/h	11750	2100
Volume-to-Capacity Ratio (v/c)	1.16	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	45.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	31.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.114	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4912	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5746	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/26/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	Atlantic Ave and SR-91 WB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7943	451
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	8734	496
Capacity (c), pc/h	11750	4200
Volume-to-Capacity Ratio (v/c)	0.74	0.12

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.343
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2096
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	67.0
Flow in Lanes 1 and 2 (v12), pc/h	2795	Ramp Junction Speed (S), mi/h	62.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.9
Level of Service (LOS)	C		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/26/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	Atlantic Ave and SR-91 WB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	2
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6656	707
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	7319	777
Capacity (c), pc/h	12000	4200
Volume-to-Capacity Ratio (v/c)	0.61	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	19.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.368
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1757
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	59.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	73.8
Flow in Lanes 1 and 2 (v12), pc/h	2342	Ramp Junction Speed (S), mi/h	67.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	21.7
Level of Service (LOS)	B		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/26/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	Atlantic Ave and SR-91 WB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9157	496
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	10497	569
Capacity (c), pc/h	11750	4200
Volume-to-Capacity Ratio (v/c)	0.89	0.14

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.349
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2519
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	65.4
Flow in Lanes 1 and 2 (v12), pc/h	3359	Ramp Junction Speed (S), mi/h	61.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	34.0
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/26/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	Atlantic Ave and SR-91 WB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	6912	817
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	7600	898
Capacity (c), pc/h	11750	4200
Volume-to-Capacity Ratio (v/c)	0.65	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.379
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1824
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	68.1
Flow in Lanes 1 and 2 (v12), pc/h	2432	Ramp Junction Speed (S), mi/h	62.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.2
Level of Service (LOS)	C		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/26/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	Atlantic Ave and SR-91 WB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9152	491
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	10063	540
Capacity (c), pc/h	11750	4200
Volume-to-Capacity Ratio (v/c)	0.86	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	27.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.347
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2415
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	65.8
Flow in Lanes 1 and 2 (v12), pc/h	3220	Ramp Junction Speed (S), mi/h	62.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	32.5
Level of Service (LOS)	C		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information

Analyst	Daniel Chuong	Date	1/26/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	Atlantic Ave and SR-91 WB Diverge		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	5	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	515
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	7729	817
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	7.73	7.73
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.928	0.928
Flow Rate (vi),pc/h	8499	898
Capacity (c), pc/h	11750	4200
Volume-to-Capacity Ratio (v/c)	0.72	0.21

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	23.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.379
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2040
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	67.3
Flow in Lanes 1 and 2 (v12), pc/h	2720	Ramp Junction Speed (S), mi/h	62.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.2
Level of Service (LOS)	C		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing
Project Description	Lakewood Blvd WB Ramps/I-405 NB		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	900
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10007	949
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	10670	1012
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.24	0.53

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	48.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	10.7
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.091	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	5270	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	6282	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	Lakewood Blvd WB Ramps/I-405 NB		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	900
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8808	644
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	9392	687
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.07	0.36

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	36.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	49.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.132	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	3992	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4679	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	Lakewood Blvd WB Ramps/I-405 NB		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	900
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11568	1097
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	12334	1170
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.44	0.62

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	62.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.072	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	6934	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8104	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	Lakewood Blvd WB Ramps/I-405 NB		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	900
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10182	744
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	10857	793
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.24	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	48.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	12.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.119	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	5457	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	6250	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	Lakewood Blvd WB Ramps/I-405 NB		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	900
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11568	1097
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	12334	1170
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.44	0.62

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	62.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.072	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	6934	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8104	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	Lakewood Blvd WB Ramps/I-405 NB		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	900
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10182	744
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	10857	793
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.24	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	48.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	12.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.119	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	5457	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	6250	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	Lakewood Blvd WB Ramps/I-405 NB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	795
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10703	696
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	10921	710
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.16	0.17

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	44.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	5521	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	Lakewood Blvd WB Ramps/I-405 NB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	795
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8808	718
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	8988	733
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	0.96	0.17

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	28.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.364
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2697
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3595	Ramp Junction Speed (S), mi/h	61.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	36.7
Level of Service (LOS)	C		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	Lakewood Blvd WB Ramps/I-405 NB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	795
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	12358	790
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	12610	806
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.34	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	59.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.5
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	7210	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	Lakewood Blvd WB Ramps/I-405 NB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	795
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10985	803
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	11209	819
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.19	0.20

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	47.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	5809	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	Lakewood Blvd WB Ramps/I-405 NB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	795
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	12288	720
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	12539	735
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.33	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	58.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	7139	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	Lakewood Blvd WB Ramps/I-405 NB Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	795
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	12288	720
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	12539	735
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.33	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	58.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.6
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	7139	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-405 SB Atlantic Ave EB Off-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	460
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8851	508
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	9437	542
Capacity (c), pc/h	11750	2000
Volume-to-Capacity Ratio (v/c)	0.80	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.477
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1976
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	67.5
Flow in Lanes 1 and 2 (v12), pc/h	3597	Ramp Junction Speed (S), mi/h	60.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	31.3
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-405 SB Atlantic Ave EB Off-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	460
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10200	532
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	10876	567
Capacity (c), pc/h	11750	2100
Volume-to-Capacity Ratio (v/c)	0.93	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.349
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2294
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	57.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	66.3
Flow in Lanes 1 and 2 (v12), pc/h	4113	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	35.3
Level of Service (LOS)	E		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-405 SB Atlantic Ave EB Off-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	460
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10232	607
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	10910	647
Capacity (c), pc/h	11750	2000
Volume-to-Capacity Ratio (v/c)	0.93	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	36.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.486
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2279
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	66.3
Flow in Lanes 1 and 2 (v12), pc/h	4170	Ramp Junction Speed (S), mi/h	59.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	36.5
Level of Service (LOS)	E		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-405 SB Atlantic Ave EB Off-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	460
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11791	60
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	12572	64
Capacity (c), pc/h	11750	2000
Volume-to-Capacity Ratio (v/c)	1.07	0.03

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	40.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	4658	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-405 SB Atlantic Ave EB Off-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	460
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10232	637
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	10910	679
Capacity (c), pc/h	11750	2000
Volume-to-Capacity Ratio (v/c)	0.93	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	36.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.489
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2270
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	66.4
Flow in Lanes 1 and 2 (v12), pc/h	4188	Ramp Junction Speed (S), mi/h	59.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	36.5
Level of Service (LOS)	E		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information

Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-405 SB Atlantic Ave EB Off-Ramp		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	5	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	460
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	11791	615
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	4.47	4.47
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.957	0.957
Flow Rate (vi),pc/h	12572	656
Capacity (c), pc/h	11750	2000
Volume-to-Capacity Ratio (v/c)	1.07	0.33

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	41.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2651
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	64.9
Flow in Lanes 1 and 2 (v12), pc/h	4755	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/21/19
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-605 NB - Carson St. Direct Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	920
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8282	813
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8886	872
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.04	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	33.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2666
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	52.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.109	Outer Lanes Freeway Speed (SO), mi/h	56.3
Flow in Lanes 1 and 2 (v12), pc/h	3554	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4426	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information

Analyst	Daniel Chuong	Date	1/21/19
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-605 NB - Carson St. Direct Ramp Merge		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	920
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	9597	664
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10297	743
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.17	0.35

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	43.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	34.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.125	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4897	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5640	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/21/19
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 NB - Carson St. Direct Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	920
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9574	940
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10273	1052
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.20	0.50

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	45.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	25.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.086	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4873	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5925	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/21/19
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-605 NB - Carson St. Direct Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	920
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11094	767
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	11904	823
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.35	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	56.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.115	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	6504	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	7327	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/21/19
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 NB - Carson St. Direct Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	920
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9574	940
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10273	1009
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.20	0.48

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	45.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	27.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.092	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4873	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5882	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/21/19
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 NB - Carson St. Direct Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	920
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11094	767
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	11904	823
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.35	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	56.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.115	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	6504	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	7327	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-605 NB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	230
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8282	584
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8886	627
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	0.95	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	38.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.354
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2329
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	66.1
Flow in Lanes 1 and 2 (v12), pc/h	4228	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	36.2
Level of Service (LOS)	E		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-605 NB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	230
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9597	777
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10297	834
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.10	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	44.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2669
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	64.8
Flow in Lanes 1 and 2 (v12), pc/h	4960	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 NB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	230
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9574	777
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10273	834
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.09	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	44.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2662
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	64.8
Flow in Lanes 1 and 2 (v12), pc/h	4949	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 NB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	230
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11094	1076
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	11904	1155
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.27	0.55

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	58.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	55.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	6504	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 NB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	230
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9574	1076
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10273	1155
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.09	0.55

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	46.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2572
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	55.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	65.2
Flow in Lanes 1 and 2 (v12), pc/h	5130	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 NB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	230
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11094	998
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	11904	1071
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.27	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	58.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	55.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	6504	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-605 SB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9401	1260
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10087	1352
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.07	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	40.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	55.3
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	4687	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-605 SB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8758	1711
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	9397	1836
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.00	0.44

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.463
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	3997	Ramp Junction Speed (S), mi/h	59.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	39.2
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 SB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10857	1446
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	11649	1552
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.24	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	54.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	6249	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 SB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10124	1978
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10863	2122
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.16	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	47.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	5463	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 SB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10859	1448
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	11652	1554
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.24	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	54.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	6252	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 SB - Carson St. Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	2
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	405
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10124	1978
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10863	2122
Capacity (c), pc/h	9400	4200
Volume-to-Capacity Ratio (v/c)	1.16	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	47.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.260	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	5463	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-605 SB - Carson St. Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	820
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8141	366
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8735	393
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	0.97	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.470
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2621
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	54.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.169	Outer Lanes Freeway Speed (SO), mi/h	56.5
Flow in Lanes 1 and 2 (v12), pc/h	3494	Ramp Junction Speed (S), mi/h	55.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3887	Average Density (D), pc/mi/ln	41.1
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-605 SB - Carson St. Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	750
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7047	229
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	7561	256
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	0.83	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.387
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2269
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.186	Outer Lanes Freeway Speed (SO), mi/h	58.6
Flow in Lanes 1 and 2 (v12), pc/h	3024	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3280	Average Density (D), pc/mi/ln	34.0
Level of Service (LOS)	C		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 SB - Carson St. Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	750
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9411	229
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10098	246
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.10	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	39.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	45.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.187	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4698	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4944	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 SB - Carson St. Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	750
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8146	562
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8741	603
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	0.99	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.519
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2623
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.142	Outer Lanes Freeway Speed (SO), mi/h	56.5
Flow in Lanes 1 and 2 (v12), pc/h	3496	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	4099	Average Density (D), pc/mi/ln	42.5
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 SB - Carson St. Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	750
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9411	562
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10098	603
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	1.14	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	41.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	40.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.142	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4698	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5301	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 SB - Carson St. Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	750
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8146	298
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8741	320
Capacity (c), pc/h	9400	1900
Volume-to-Capacity Ratio (v/c)	0.96	0.17

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.461
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2623
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.178	Outer Lanes Freeway Speed (SO), mi/h	56.5
Flow in Lanes 1 and 2 (v12), pc/h	3496	Ramp Junction Speed (S), mi/h	55.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	3816	Average Density (D), pc/mi/ln	40.7
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-605 SB - Carson St. On-Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8141	362
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8735	388
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	0.97	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.438
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2621
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.169	Outer Lanes Freeway Speed (SO), mi/h	56.5
Flow in Lanes 1 and 2 (v12), pc/h	3494	Ramp Junction Speed (S), mi/h	55.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3882	Average Density (D), pc/mi/ln	40.9
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-605 SB - Carson St. On-Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7047	227
Peak Hour Factor (PHF)	0.98	0.94
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	7561	254
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	0.83	0.12

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	26.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.352
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2269
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.186	Outer Lanes Freeway Speed (SO), mi/h	58.6
Flow in Lanes 1 and 2 (v12), pc/h	3024	Ramp Junction Speed (S), mi/h	57.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3278	Average Density (D), pc/mi/ln	33.7
Level of Service (LOS)	C		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 SB - Carson St. On-Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9411	432
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10098	464
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.12	0.22

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	40.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	43.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.160	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4698	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5162	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 SB - Carson St. On-Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8146	556
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8741	597
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	0.99	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	32.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.483
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2623
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	53.9
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.143	Outer Lanes Freeway Speed (SO), mi/h	56.5
Flow in Lanes 1 and 2 (v12), pc/h	3496	Ramp Junction Speed (S), mi/h	55.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	4093	Average Density (D), pc/mi/ln	42.2
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-605 SB - Carson St. On-Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9411	445
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	10098	477
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	1.12	0.23

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	40.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	43.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.158	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	4698	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5175	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-605 SB - Carson St. On-Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	800
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8146	295
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	5.10	5.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.951	0.951
Flow Rate (vi),pc/h	8741	317
Capacity (c), pc/h	9400	2100
Volume-to-Capacity Ratio (v/c)	0.96	0.15

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	30.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.426
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2623
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.178	Outer Lanes Freeway Speed (SO), mi/h	56.5
Flow in Lanes 1 and 2 (v12), pc/h	3496	Ramp Junction Speed (S), mi/h	55.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3813	Average Density (D), pc/mi/ln	40.5
Level of Service (LOS)	D		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information

Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 NB - SR-1 WB Ramp Merge		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	320
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	10333	130
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11181	141
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.61	0.07

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	1993.2	Density in Ramp Influence Area (DR), pc/mi/ln	70.7
Distance to Upstream Ramp (LUP), ft	370	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.484	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8481	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8622	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710 NB - SR-1 WB Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	320
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10074	67
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11365	76
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.62	0.04

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	2018.7	Density in Ramp Influence Area (DR), pc/mi/ln	71.7
Distance to Upstream Ramp (LUP), ft	370	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.482	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8665	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8741	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 WB Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	320
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10604	130
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11474	141
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.65	0.07

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	2055.9	Density in Ramp Influence Area (DR), pc/mi/ln	73.0
Distance to Upstream Ramp (LUP), ft	370	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.480	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8774	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8915	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information

Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 WB Ramp Merge		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	320
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	10622	67
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11494	72
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.64	0.04

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	2045.4	Density in Ramp Influence Area (DR), pc/mi/ln	72.7
Distance to Upstream Ramp (LUP), ft	370	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.481	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8794	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8866	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 WB Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	320
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10410	130
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11265	141
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.62	0.07

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	2011.2	Density in Ramp Influence Area (DR), pc/mi/ln	71.4
Distance to Upstream Ramp (LUP), ft	370	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.483	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8565	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8706	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 WB Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	320
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10798	67
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11684	72
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.67	0.04

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	2086.1	Density in Ramp Influence Area (DR), pc/mi/ln	74.1
Distance to Upstream Ramp (LUP), ft	370	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.478	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8984	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	9056	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10333	441
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11181	477
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.59	0.25

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	481.8	Density in Ramp Influence Area (DR), pc/mi/ln	75.5
Distance to Upstream Ramp (LUP), ft	370	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	490	Off-Ramp Influenece Area Speed (SR), mi/h	51.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.459	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	8481	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10505	431
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11367	466
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.61	0.25

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	244.0	Density in Ramp Influence Area (DR), pc/mi/ln	77.1
Distance to Upstream Ramp (LUP), ft	550	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	490	Off-Ramp Influenece Area Speed (SR), mi/h	51.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.454	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	8667	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11132	528
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	12046	571
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.71	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	461.6	Density in Ramp Influence Area (DR), pc/mi/ln	83.0
Distance to Upstream Ramp (LUP), ft	370	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	490	Off-Ramp Influenece Area Speed (SR), mi/h	51.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.433	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9346	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11193	567
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	12112	614
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.72	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	239.3	Density in Ramp Influence Area (DR), pc/mi/ln	83.5
Distance to Upstream Ramp (LUP), ft	370	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	490	Off-Ramp Influenece Area Speed (SR), mi/h	50.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.429	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9412	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10922	512
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11819	554
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.68	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	467.7	Density in Ramp Influence Area (DR), pc/mi/ln	81.0
Distance to Upstream Ramp (LUP), ft	370	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	765	Off-Ramp Influenece Area Speed (SR), mi/h	51.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.439	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9119	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11351	553
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	12283	598
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.74	0.31

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	235.3	Density in Ramp Influence Area (DR), pc/mi/ln	85.0
Distance to Upstream Ramp (LUP), ft	370	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	490	Off-Ramp Influenece Area Speed (SR), mi/h	50.9
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.425	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9583	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 NB - SR-1 EB Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	260
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10333	198
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11181	214
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.62	0.11

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1459.0	Density in Ramp Influence Area (DR), pc/mi/ln	71.6
Distance to Upstream Ramp (LUP), ft	500	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	260	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.524	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8481	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8695	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710 NB - SR-1 EB Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	260
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10074	180
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11365	203
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.64	0.11

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1496.0	Density in Ramp Influence Area (DR), pc/mi/ln	73.0
Distance to Upstream Ramp (LUP), ft	500	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	260	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.522	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8665	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8868	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 EB Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	260
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10604	201
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11474	217
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.66	0.11

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1522.3	Density in Ramp Influence Area (DR), pc/mi/ln	73.9
Distance to Upstream Ramp (LUP), ft	500	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	260	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.520	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8774	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8991	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 EB Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	260
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10622	208
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11983	235
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.73	0.12

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1635.1	Density in Ramp Influence Area (DR), pc/mi/ln	78.0
Distance to Upstream Ramp (LUP), ft	260	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	500	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.498	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	9283	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	9518	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 EB Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	260
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10410	211
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11265	228
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.63	0.12

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1479.9	Density in Ramp Influence Area (DR), pc/mi/ln	72.4
Distance to Upstream Ramp (LUP), ft	500	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	260	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.523	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8565	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8793	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/25/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 EB Loop Ramp Merge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Acceleration Length (LA),ft	1500	260
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10798	208
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11684	225
Capacity (c), pc/h	7050	1900
Volume-to-Capacity Ratio (v/c)	1.69	0.12

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1569.0	Density in Ramp Influence Area (DR), pc/mi/ln	75.6
Distance to Upstream Ramp (LUP), ft	500	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	260	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.517	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8984	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	9209	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 NB - SR-1 EB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10774	326
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11658	353
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.65	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	79.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.452	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	8958	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10505	413
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11367	447
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.61	0.22

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	242.9	Density in Ramp Influence Area (DR), pc/mi/ln	77.1
Distance to Upstream Ramp (LUP), ft	550	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	765	Off-Ramp Influenece Area Speed (SR), mi/h	54.2
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.455	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	8667	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11132	327
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	12046	354
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.71	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	437.9	Density in Ramp Influence Area (DR), pc/mi/ln	83.0
Distance to Upstream Ramp (LUP), ft	550	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	765	Off-Ramp Influenece Area Speed (SR), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.443	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9346	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 EB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	11132	477
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	12046	516
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.71	0.26

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	728.6	Density in Ramp Influence Area (DR), pc/mi/ln	83.0
Distance to Upstream Ramp (LUP), ft	550	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	765	Off-Ramp Influenece Area Speed (SR), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.435	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9346	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB - SR-1 EB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10922	353
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	11819	382
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.68	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	727.4	Density in Ramp Influence Area (DR), pc/mi/ln	81.0
Distance to Upstream Ramp (LUP), ft	550	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	765	Off-Ramp Influenece Area Speed (SR), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.447	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9119	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information

Analyst	Daniel Chuong	Date	1/15/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB - SR-1 EB Off-Ramp Diverge		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	185
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	11351	477
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	12283	516
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.74	0.26

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	716.0	Density in Ramp Influence Area (DR), pc/mi/ln	85.0
Distance to Upstream Ramp (LUP), ft	550	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	765	Off-Ramp Influenece Area Speed (SR), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.429	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	9583	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	2/1/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 SB SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	290
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8316	84
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	8486	86
Capacity (c), pc/h	7050	2100
Volume-to-Capacity Ratio (v/c)	1.20	0.04

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	51.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.544	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	5786	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	2/1/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710 SB SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	290
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9727	84
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	9926	86
Capacity (c), pc/h	7050	2100
Volume-to-Capacity Ratio (v/c)	1.41	0.04

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	63.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.508	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	7226	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 SB SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	290
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8907	86
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	9089	88
Capacity (c), pc/h	7050	2100
Volume-to-Capacity Ratio (v/c)	1.29	0.04

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	56.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.529	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	6389	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 SB SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	290
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	10076	60
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	10282	61
Capacity (c), pc/h	7050	2100
Volume-to-Capacity Ratio (v/c)	1.46	0.03

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	66.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.500	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	7582	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 SB SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	290
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9183	87
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	9370	89
Capacity (c), pc/h	7050	2100
Volume-to-Capacity Ratio (v/c)	1.33	0.04

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	59.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.522	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	6670	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Diverge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 SB SR-1 WB Off-Ramp Diverge		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	290
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9984	60
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	0.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	1.000	1.000
Flow Rate (vi),pc/h	10188	61
Capacity (c), pc/h	7050	2100
Volume-to-Capacity Ratio (v/c)	1.45	0.03

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	66.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	58.0
Prop. Freeway Vehicles in Lane 1 and 2 (PD)	0.502	Outer Lanes Freeway Speed (SO), mi/h	64.7
Flow in Lanes 1 and 2 (v12), pc/h	7488	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 SB SR-1 EB On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	575
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7452	522
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	8064	565
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.22	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	47.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	24.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.594	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	5364	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5929	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710 SB SR-1 EB On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	575
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8759	301
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	9478	326
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.39	0.16

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	57.2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.594	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	6778	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	7104	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 SB SR-1 EB On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	575
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	7955	536
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	8608	580
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.30	0.29

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	52.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.594	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	5908	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	6488	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 SB SR-1 EB On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	575
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	8953	367
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	9688	397
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.43	0.20

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	59.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.594	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	6988	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	7385	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 SB SR-1 EB On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	575
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9096	603
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	9843	652
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.49	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	62.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.594	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	7143	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	7795	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Merge Report

Project Information			
Analyst	Daniel Chuong	Date	1/19/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 SB SR-1 EB On-Ramp		

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	3	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	575
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	9924	363
Peak Hour Factor (PHF)	0.98	0.98
Total Trucks, %	6.02	6.02
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.943	0.943
Flow Rate (vi),pc/h	10739	393
Capacity (c), pc/h	7050	2000
Volume-to-Capacity Ratio (v/c)	1.58	0.20

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	67.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	2700
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	0.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	0.594	Outer Lanes Freeway Speed (SO), mi/h	56.1
Flow in Lanes 1 and 2 (v12), pc/h	8039	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	8432	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

Copyright © 2019 University of Florida. All Rights Reserved.

APPENDIX C

CALTRANS FACILITY ANALYSIS WORKSHEETS

Arterial Weaving (Cloverleaf) Analysis Worksheets

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710/Anaheim St Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	165	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	846	368	0	98
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	915	398	0	106
Weaving Flow Rate (v_W), pc/h	504	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	915	Density-Based Capacity (c_{IWL}), pc/h/ln		1740
Total Flow Rate (v), pc/h	1419	Demand Flow-Based Capacity (c_{IW}), pc/h		6761
Volume Ratio (VR)	0.355	Weaving Segment Capacity (c_W), veh/h		4922
Minimum Lane Change Rate (LC_{MIN}), lc/h	504	Adjusted Weaving Area Capacity, pc/h		5220
Maximum Weaving Length (L_{MAX}), ft	6181	Volume-to-Capacity Ratio (v/c)		0.27

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	21	Average Weaving Speed (S_W),mi/h	34.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	39.1
Weaving Lane Change Rate (LC_W), lc/h	504	Average Speed (S), mi/h	37.3
Weaving Lane Change Rate (LC_{All}), lc/h	504	Density (D), pc/mi/ln	12.7
Weaving Intensity Factor (W)	0.545	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710/Anaheim St Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	165	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	671	392	0	104
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	726	424	0	113
Weaving Flow Rate (v_W), pc/h	537	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	726	Density-Based Capacity (c_{IWL}), pc/h/ln		1680
Total Flow Rate (v), pc/h	1263	Demand Flow-Based Capacity (c_{IW}), pc/h		5647
Volume Ratio (VR)	0.425	Weaving Segment Capacity (c_W), veh/h		4753
Minimum Lane Change Rate (LC_{MIN}), lc/h	537	Adjusted Weaving Area Capacity, pc/h		5040
Maximum Weaving Length (L_{MAX}), ft	6963	Volume-to-Capacity Ratio (v/c)		0.25

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	17	Average Weaving Speed (S_W),mi/h	34.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	39.1
Weaving Lane Change Rate (LC_W), lc/h	537	Average Speed (S), mi/h	36.8
Weaving Lane Change Rate (LC_{All}), lc/h	537	Density (D), pc/mi/ln	11.4
Weaving Intensity Factor (W)	0.573	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710/Anaheim St Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	165	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1066	442	0	118
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1154	478	0	128
Weaving Flow Rate (v_W), pc/h	606	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1154	Density-Based Capacity (c_{IWL}), pc/h/ln		1749
Total Flow Rate (v), pc/h	1760	Demand Flow-Based Capacity (c_{IW}), pc/h		6977
Volume Ratio (VR)	0.344	Weaving Segment Capacity (c_W), veh/h		4948
Minimum Lane Change Rate (LC_{MIN}), lc/h	606	Adjusted Weaving Area Capacity, pc/h		5247
Maximum Weaving Length (L_{MAX}), ft	6061	Volume-to-Capacity Ratio (v/c)		0.34

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	27	Average Weaving Speed (S_W),mi/h	33.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	37.8
Weaving Lane Change Rate (LC_W), lc/h	606	Average Speed (S), mi/h	36.2
Weaving Lane Change Rate (LC_{All}), lc/h	606	Density (D), pc/mi/ln	16.2
Weaving Intensity Factor (W)	0.631	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710/Anaheim St Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	165	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	835	470	0	125
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	904	509	0	135
Weaving Flow Rate (v_W), pc/h	644	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	904	Density-Based Capacity (c_{IWL}), pc/h/ln		1688
Total Flow Rate (v), pc/h	1548	Demand Flow-Based Capacity (c_{IW}), pc/h		5769
Volume Ratio (VR)	0.416	Weaving Segment Capacity (c_W), veh/h		4775
Minimum Lane Change Rate (LC_{MIN}), lc/h	644	Adjusted Weaving Area Capacity, pc/h		5064
Maximum Weaving Length (L_{MAX}), ft	6861	Volume-to-Capacity Ratio (v/c)		0.31

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	21	Average Weaving Speed (S_W),mi/h	33.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	37.9
Weaving Lane Change Rate (LC_W), lc/h	644	Average Speed (S), mi/h	35.7
Weaving Lane Change Rate (LC_{All}), lc/h	644	Density (D), pc/mi/ln	14.5
Weaving Intensity Factor (W)	0.662	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710/Anaheim St Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	165	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1141	442	0	118
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1235	478	0	128
Weaving Flow Rate (v_W), pc/h	606	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1235	Density-Based Capacity (c_{IWL}), pc/h/ln		1761
Total Flow Rate (v), pc/h	1841	Demand Flow-Based Capacity (c_{IW}), pc/h		7295
Volume Ratio (VR)	0.329	Weaving Segment Capacity (c_W), veh/h		4982
Minimum Lane Change Rate (LC_{MIN}), lc/h	606	Adjusted Weaving Area Capacity, pc/h		5283
Maximum Weaving Length (L_{MAX}), ft	5897	Volume-to-Capacity Ratio (v/c)		0.35

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	29	Average Weaving Speed (S_W),mi/h	33.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	37.7
Weaving Lane Change Rate (LC_W), lc/h	606	Average Speed (S), mi/h	36.2
Weaving Lane Change Rate (LC_{All}), lc/h	606	Density (D), pc/mi/ln	17.0
Weaving Intensity Factor (W)	0.631	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710/Anaheim St Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	165	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	863	470	0	125
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	934	509	0	135
Weaving Flow Rate (v_W), pc/h	644	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	934	Density-Based Capacity (c_{IWL}), pc/h/ln		1695
Total Flow Rate (v), pc/h	1578	Demand Flow-Based Capacity (c_{IW}), pc/h		5882
Volume Ratio (VR)	0.408	Weaving Segment Capacity (c_W), veh/h		4795
Minimum Lane Change Rate (LC_{MIN}), lc/h	644	Adjusted Weaving Area Capacity, pc/h		5085
Maximum Weaving Length (L_{MAX}), ft	6771	Volume-to-Capacity Ratio (v/c)		0.31

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	22	Average Weaving Speed (S_W),mi/h	33.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	37.8
Weaving Lane Change Rate (LC_W), lc/h	644	Average Speed (S), mi/h	35.7
Weaving Lane Change Rate (LC_{All}), lc/h	644	Density (D), pc/mi/ln	14.7
Weaving Intensity Factor (W)	0.662	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710/Anaheim St Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	170	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	684	670	0	540
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	740	725	0	584
Weaving Flow Rate (v_W), pc/h	1309	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	740	Density-Based Capacity (c_{IWL}), pc/h/ln		1487
Total Flow Rate (v), pc/h	2049	Demand Flow-Based Capacity (c_{IW}), pc/h		3756
Volume Ratio (VR)	0.639	Weaving Segment Capacity (c_W), veh/h		3542
Minimum Lane Change Rate (LC_{MIN}), lc/h	1309	Adjusted Weaving Area Capacity, pc/h		3756
Maximum Weaving Length (L_{MAX}), ft	9496	Volume-to-Capacity Ratio (v/c)		0.55

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	18	Average Weaving Speed (S_W),mi/h	29.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	32.3
Weaving Lane Change Rate (LC_W), lc/h	1309	Average Speed (S), mi/h	30.2
Weaving Lane Change Rate (LC_{All}), lc/h	1309	Density (D), pc/mi/ln	22.6
Weaving Intensity Factor (W)	1.131	Level of Service (LOS)	C

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710/Anaheim St Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	170	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1158	712	0	575
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1253	770	0	622
Weaving Flow Rate (v_W), pc/h	1392	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1253	Density-Based Capacity (c_{IWL}), pc/h/ln		1591
Total Flow Rate (v), pc/h	2645	Demand Flow-Based Capacity (c_{IW}), pc/h		4563
Volume Ratio (VR)	0.526	Weaving Segment Capacity (c_W), veh/h		4303
Minimum Lane Change Rate (LC_{MIN}), lc/h	1392	Adjusted Weaving Area Capacity, pc/h		4563
Maximum Weaving Length (L_{MAX}), ft	8132	Volume-to-Capacity Ratio (v/c)		0.58

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	30	Average Weaving Speed (S_W),mi/h	28.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	30.7
Weaving Lane Change Rate (LC_W), lc/h	1392	Average Speed (S), mi/h	29.6
Weaving Lane Change Rate (LC_{All}), lc/h	1392	Density (D), pc/mi/ln	29.8
Weaving Intensity Factor (W)	1.187	Level of Service (LOS)	D

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710/Anaheim St Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	170	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1030	804	0	648
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1115	870	0	701
Weaving Flow Rate (v_W), pc/h	1571	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1115	Density-Based Capacity (c_{IWL}), pc/h/ln		1537
Total Flow Rate (v), pc/h	2686	Demand Flow-Based Capacity (c_{IW}), pc/h		4103
Volume Ratio (VR)	0.585	Weaving Segment Capacity (c_W), veh/h		3869
Minimum Lane Change Rate (LC_{MIN}), lc/h	1571	Adjusted Weaving Area Capacity, pc/h		4103
Maximum Weaving Length (L_{MAX}), ft	8837	Volume-to-Capacity Ratio (v/c)		0.65

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	27	Average Weaving Speed (S_W),mi/h	28.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	29.4
Weaving Lane Change Rate (LC_W), lc/h	1571	Average Speed (S), mi/h	28.6
Weaving Lane Change Rate (LC_{All}), lc/h	1571	Density (D), pc/mi/ln	31.3
Weaving Intensity Factor (W)	1.306	Level of Service (LOS)	D

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710/Anaheim St Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	170	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1408	854	0	690
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1524	924	0	747
Weaving Flow Rate (v_W), pc/h	1671	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1524	Density-Based Capacity (c_{IWL}), pc/h/ln		1594
Total Flow Rate (v), pc/h	3195	Demand Flow-Based Capacity (c_{IW}), pc/h		4589
Volume Ratio (VR)	0.523	Weaving Segment Capacity (c_W), veh/h		4327
Minimum Lane Change Rate (LC_{MIN}), lc/h	1671	Adjusted Weaving Area Capacity, pc/h		4589
Maximum Weaving Length (L_{MAX}), ft	8097	Volume-to-Capacity Ratio (v/c)		0.70

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	36	Average Weaving Speed (S_W),mi/h	27.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	27.9
Weaving Lane Change Rate (LC_W), lc/h	1671	Average Speed (S), mi/h	27.7
Weaving Lane Change Rate (LC_{All}), lc/h	1671	Density (D), pc/mi/ln	38.4
Weaving Intensity Factor (W)	1.372	Level of Service (LOS)	E

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710/Anaheim St Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	170	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1062	804	0	648
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1149	870	0	701
Weaving Flow Rate (v_W), pc/h	1571	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1149	Density-Based Capacity (c_{IWL}), pc/h/ln		1543
Total Flow Rate (v), pc/h	2720	Demand Flow-Based Capacity (c_{IW}), pc/h		4152
Volume Ratio (VR)	0.578	Weaving Segment Capacity (c_W), veh/h		3916
Minimum Lane Change Rate (LC_{MIN}), lc/h	1571	Adjusted Weaving Area Capacity, pc/h		4153
Maximum Weaving Length (L_{MAX}), ft	8752	Volume-to-Capacity Ratio (v/c)		0.65

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	27	Average Weaving Speed (S_W),mi/h	28.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	29.3
Weaving Lane Change Rate (LC_W), lc/h	1571	Average Speed (S), mi/h	28.5
Weaving Lane Change Rate (LC_{All}), lc/h	1571	Density (D), pc/mi/ln	31.8
Weaving Intensity Factor (W)	1.306	Level of Service (LOS)	D

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710/Anaheim St Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	170	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1429	854	0	690
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1546	924	0	747
Weaving Flow Rate (v_W), pc/h	1671	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1546	Density-Based Capacity (c_{IWL}), pc/h/ln		1597
Total Flow Rate (v), pc/h	3217	Demand Flow-Based Capacity (c_{IW}), pc/h		4624
Volume Ratio (VR)	0.519	Weaving Segment Capacity (c_W), veh/h		4361
Minimum Lane Change Rate (LC_{MIN}), lc/h	1671	Adjusted Weaving Area Capacity, pc/h		4625
Maximum Weaving Length (L_{MAX}), ft	8049	Volume-to-Capacity Ratio (v/c)		0.70

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	37	Average Weaving Speed (S_W),mi/h	27.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	27.8
Weaving Lane Change Rate (LC_W), lc/h	1671	Average Speed (S), mi/h	27.7
Weaving Lane Change Rate (LC_{All}), lc/h	1671	Density (D), pc/mi/ln	38.7
Weaving Intensity Factor (W)	1.372	Level of Service (LOS)	E

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 NB/SR-1 Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	360	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1099	130	0	84
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1189	141	0	91
Weaving Flow Rate (v_W), pc/h	232	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1189	Density-Based Capacity (c_{IWL}), pc/h/ln		1909
Total Flow Rate (v), pc/h	1421	Demand Flow-Based Capacity (c_{IW}), pc/h		14724
Volume Ratio (VR)	0.163	Weaving Segment Capacity (c_W), veh/h		3600
Minimum Lane Change Rate (LC_{MIN}), lc/h	232	Adjusted Weaving Area Capacity, pc/h		3818
Maximum Weaving Length (L_{MAX}), ft	4161	Volume-to-Capacity Ratio (v/c)		0.37

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	60	Average Weaving Speed (S_W),mi/h	40.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	55	Average Non-Weaving Speed (S_{NW}), mi/h	39.9
Weaving Lane Change Rate (LC_W), lc/h	256	Average Speed (S), mi/h	39.9
Weaving Lane Change Rate (LC_{All}), lc/h	311	Density (D), pc/mi/ln	17.8
Weaving Intensity Factor (W)	0.201	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710 NB/SR-1 Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	360	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	727	67	0	52
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	787	72	0	56
Weaving Flow Rate (v_W), pc/h	128	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	787	Density-Based Capacity (c_{IWL}), pc/h/ln		1927
Total Flow Rate (v), pc/h	915	Demand Flow-Based Capacity (c_{IW}), pc/h		17143
Volume Ratio (VR)	0.140	Weaving Segment Capacity (c_W), veh/h		3634
Minimum Lane Change Rate (LC_{MIN}), lc/h	128	Adjusted Weaving Area Capacity, pc/h		3854
Maximum Weaving Length (L_{MAX}), ft	3932	Volume-to-Capacity Ratio (v/c)		0.24

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	40	Average Weaving Speed (S_W),mi/h	41.9
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	41.9
Weaving Lane Change Rate (LC_W), lc/h	152	Average Speed (S), mi/h	41.9
Weaving Lane Change Rate (LC_{All}), lc/h	152	Density (D), pc/mi/ln	10.9
Weaving Intensity Factor (W)	0.114	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB/SR-1 Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	360	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1270	130	0	86
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1374	141	0	93
Weaving Flow Rate (v_W), pc/h	234	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1374	Density-Based Capacity (c_{IWL}), pc/h/ln		1922
Total Flow Rate (v), pc/h	1608	Demand Flow-Based Capacity (c_{IW}), pc/h		16438
Volume Ratio (VR)	0.146	Weaving Segment Capacity (c_W), veh/h		3625
Minimum Lane Change Rate (LC_{MIN}), lc/h	234	Adjusted Weaving Area Capacity, pc/h		3844
Maximum Weaving Length (L_{MAX}), ft	3992	Volume-to-Capacity Ratio (v/c)		0.42

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	69	Average Weaving Speed (S_W),mi/h	39.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	93	Average Non-Weaving Speed (S_{NW}), mi/h	39.5
Weaving Lane Change Rate (LC_W), lc/h	258	Average Speed (S), mi/h	39.5
Weaving Lane Change Rate (LC_{All}), lc/h	351	Density (D), pc/mi/ln	20.4
Weaving Intensity Factor (W)	0.222	Level of Service (LOS)	C

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB/SR-1 Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	360	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	840	67	0	60
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	909	72	0	65
Weaving Flow Rate (v_W), pc/h	137	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	909	Density-Based Capacity (c_{IWL}), pc/h/ln		1934
Total Flow Rate (v), pc/h	1046	Demand Flow-Based Capacity (c_{IW}), pc/h		18321
Volume Ratio (VR)	0.131	Weaving Segment Capacity (c_W), veh/h		3648
Minimum Lane Change Rate (LC_{MIN}), lc/h	137	Adjusted Weaving Area Capacity, pc/h		3869
Maximum Weaving Length (L_{MAX}), ft	3843	Volume-to-Capacity Ratio (v/c)		0.27

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	46	Average Weaving Speed (S_W),mi/h	41.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	41.5
Weaving Lane Change Rate (LC_W), lc/h	161	Average Speed (S), mi/h	41.5
Weaving Lane Change Rate (LC_{All}), lc/h	161	Density (D), pc/mi/ln	12.6
Weaving Intensity Factor (W)	0.120	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 NB/SR-1 Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	360	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1270	130	0	87
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1374	141	0	94
Weaving Flow Rate (v_W), pc/h	235	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1374	Density-Based Capacity (c_{IWL}), pc/h/ln		1922
Total Flow Rate (v), pc/h	1609	Demand Flow-Based Capacity (c_{IW}), pc/h		16438
Volume Ratio (VR)	0.146	Weaving Segment Capacity (c_W), veh/h		3625
Minimum Lane Change Rate (LC_{MIN}), lc/h	235	Adjusted Weaving Area Capacity, pc/h		3844
Maximum Weaving Length (L_{MAX}), ft	3992	Volume-to-Capacity Ratio (v/c)		0.42

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	69	Average Weaving Speed (S_W),mi/h	39.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	93	Average Non-Weaving Speed (S_{NW}), mi/h	39.4
Weaving Lane Change Rate (LC_W), lc/h	259	Average Speed (S), mi/h	39.4
Weaving Lane Change Rate (LC_{All}), lc/h	352	Density (D), pc/mi/ln	20.4
Weaving Intensity Factor (W)	0.222	Level of Service (LOS)	C

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 NB/SR-1 Cloverleaf WB		

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	360	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	737	67	0	60
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	797	72	0	65
Weaving Flow Rate (v_W), pc/h	137	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	797	Density-Based Capacity (c_{IWL}), pc/h/ln		1921
Total Flow Rate (v), pc/h	934	Demand Flow-Based Capacity (c_{IW}), pc/h		16327
Volume Ratio (VR)	0.147	Weaving Segment Capacity (c_W), veh/h		3623
Minimum Lane Change Rate (LC_{MIN}), lc/h	137	Adjusted Weaving Area Capacity, pc/h		3842
Maximum Weaving Length (L_{MAX}), ft	4002	Volume-to-Capacity Ratio (v/c)		0.24

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	40	Average Weaving Speed (S_W),mi/h	41.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	41.8
Weaving Lane Change Rate (LC_W), lc/h	161	Average Speed (S), mi/h	41.8
Weaving Lane Change Rate (LC_{All}), lc/h	161	Density (D), pc/mi/ln	11.2
Weaving Intensity Factor (W)	0.120	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing AM
Project Description	I-710 SB/SR-1 Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	215	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1072	409	0	326
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1160	443	0	353
Weaving Flow Rate (v_W), pc/h	796	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1160	Density-Based Capacity (c_{IWL}), pc/h/ln		1699
Total Flow Rate (v), pc/h	1956	Demand Flow-Based Capacity (c_{IW}), pc/h		5897
Volume Ratio (VR)	0.407	Weaving Segment Capacity (c_W), veh/h		4806
Minimum Lane Change Rate (LC_{MIN}), lc/h	796	Adjusted Weaving Area Capacity, pc/h		5097
Maximum Weaving Length (L_{MAX}), ft	6760	Volume-to-Capacity Ratio (v/c)		0.38

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	35	Average Weaving Speed (S_W),mi/h	33.3
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	36.1
Weaving Lane Change Rate (LC_W), lc/h	796	Average Speed (S), mi/h	34.9
Weaving Lane Change Rate (LC_{All}), lc/h	796	Density (D), pc/mi/ln	18.7
Weaving Intensity Factor (W)	0.635	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2018
Jurisdiction	Caltrans	Time Period Analyzed	Existing PM
Project Description	I-710 SB/SR-1 Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	215	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1736	560	0	413
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1879	606	0	447
Weaving Flow Rate (v_W), pc/h	1053	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1879	Density-Based Capacity (c_{IWL}), pc/h/ln		1740
Total Flow Rate (v), pc/h	2932	Demand Flow-Based Capacity (c_{IW}), pc/h		6685
Volume Ratio (VR)	0.359	Weaving Segment Capacity (c_W), veh/h		4922
Minimum Lane Change Rate (LC_{MIN}), lc/h	1053	Adjusted Weaving Area Capacity, pc/h		5220
Maximum Weaving Length (L_{MAX}), ft	6225	Volume-to-Capacity Ratio (v/c)		0.56

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	57	Average Weaving Speed (S_W),mi/h	31.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	32.7
Weaving Lane Change Rate (LC_W), lc/h	1053	Average Speed (S), mi/h	32.3
Weaving Lane Change Rate (LC_{All}), lc/h	1053	Density (D), pc/mi/ln	30.3
Weaving Intensity Factor (W)	0.792	Level of Service (LOS)	D

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 SB/SR-1 Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	215	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1126	455	0	327
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1218	492	0	354
Weaving Flow Rate (v_W), pc/h	846	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1218	Density-Based Capacity (c_{IWL}), pc/h/ln		1697
Total Flow Rate (v), pc/h	2064	Demand Flow-Based Capacity (c_{IW}), pc/h		5854
Volume Ratio (VR)	0.410	Weaving Segment Capacity (c_W), veh/h		4801
Minimum Lane Change Rate (LC_{MIN}), lc/h	846	Adjusted Weaving Area Capacity, pc/h		5091
Maximum Weaving Length (L_{MAX}), ft	6794	Volume-to-Capacity Ratio (v/c)		0.41

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	37	Average Weaving Speed (S_W),mi/h	33.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	35.6
Weaving Lane Change Rate (LC_W), lc/h	846	Average Speed (S), mi/h	34.5
Weaving Lane Change Rate (LC_{All}), lc/h	846	Density (D), pc/mi/ln	19.9
Weaving Intensity Factor (W)	0.666	Level of Service (LOS)	B

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 NP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 SB/SR-1 Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	215	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2006	715	0	477
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	2171	774	0	516
Weaving Flow Rate (v_W), pc/h	1290	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	2171	Density-Based Capacity (c_{IWL}), pc/h/ln		1728
Total Flow Rate (v), pc/h	3461	Demand Flow-Based Capacity (c_{IW}), pc/h		6434
Volume Ratio (VR)	0.373	Weaving Segment Capacity (c_W), veh/h		4889
Minimum Lane Change Rate (LC_{MIN}), lc/h	1290	Adjusted Weaving Area Capacity, pc/h		5185
Maximum Weaving Length (L_{MAX}), ft	6380	Volume-to-Capacity Ratio (v/c)		0.67

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	65	Average Weaving Speed (S_W),mi/h	30.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	30.2
Weaving Lane Change Rate (LC_W), lc/h	1290	Average Speed (S), mi/h	30.3
Weaving Lane Change Rate (LC_{All}), lc/h	1290	Density (D), pc/mi/ln	38.1
Weaving Intensity Factor (W)	0.929	Level of Service (LOS)	E

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	AM
Project Description	I-710 SB/SR-1 Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	215	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1163	436	0	353
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	1258	472	0	382
Weaving Flow Rate (v_W), pc/h	854	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1258	Density-Based Capacity (c_{IWL}), pc/h/ln		1702
Total Flow Rate (v), pc/h	2112	Demand Flow-Based Capacity (c_{IW}), pc/h		5941
Volume Ratio (VR)	0.404	Weaving Segment Capacity (c_W), veh/h		4815
Minimum Lane Change Rate (LC_{MIN}), lc/h	854	Adjusted Weaving Area Capacity, pc/h		5106
Maximum Weaving Length (L_{MAX}), ft	6726	Volume-to-Capacity Ratio (v/c)		0.41

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	38	Average Weaving Speed (S_W),mi/h	33.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	35.5
Weaving Lane Change Rate (LC_W), lc/h	854	Average Speed (S), mi/h	34.4
Weaving Lane Change Rate (LC_{All}), lc/h	854	Density (D), pc/mi/ln	20.5
Weaving Intensity Factor (W)	0.671	Level of Service (LOS)	C

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Freeway Weaving Report

Project Information

Analyst	Daniel Chuong	Date	1/21/2019
Agency	LSA	Analysis Year	2040 WP
Jurisdiction	Caltrans	Time Period Analyzed	PM
Project Description	I-710 SB/SR-1 Cloverleaf EB		

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	215	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.40	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2006	711	0	477
Peak Hour Factor (PHF)	0.98	0.98	0.98	0.98
Total Trucks, %	6.02	6.02	6.02	6.02
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.943	0.943	0.943
Flow Rate (v_i), pc/h	2171	769	0	516
Weaving Flow Rate (v_W), pc/h	1285	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	2171	Density-Based Capacity (c_{IWL}), pc/h/ln		1729
Total Flow Rate (v), pc/h	3456	Demand Flow-Based Capacity (c_{IW}), pc/h		6452
Volume Ratio (VR)	0.372	Weaving Segment Capacity (c_W), veh/h		4891
Minimum Lane Change Rate (LC_{MIN}), lc/h	1285	Adjusted Weaving Area Capacity, pc/h		5187
Maximum Weaving Length (L_{MAX}), ft	6369	Volume-to-Capacity Ratio (v/c)		0.67

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	65	Average Weaving Speed (S_W),mi/h	30.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	30.2
Weaving Lane Change Rate (LC_W), lc/h	1285	Average Speed (S), mi/h	30.3
Weaving Lane Change Rate (LC_{All}), lc/h	1285	Density (D), pc/mi/ln	38.0
Weaving Intensity Factor (W)	0.926	Level of Service (LOS)	E

Copyright © 2019 University of Florida. All Rights Reserved.

APPENDIX D

HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE WORKSHEETS

This page intentionally left blank

APPENDIX D

HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE WORKSHEETS

Existing (2018)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	847	105	65	1168	131	202	461	160	262	479	163
Future Volume (veh/h)	142	847	105	65	1168	131	202	461	160	262	479	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	921	114	71	1270	142	220	501	174	285	521	177
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	2075	256	242	1376	154	257	777	347	319	902	402
Arrive On Green	0.10	0.45	0.45	0.30	0.30	0.30	0.14	0.22	0.22	0.18	0.25	0.25
Sat Flow, veh/h	1781	4604	568	545	4660	521	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	154	680	355	71	928	484	220	501	174	285	521	177
Grp Sat Flow(s),veh/h/ln	1781	1702	1768	545	1702	1777	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.6	12.2	12.3	9.4	23.5	23.5	10.8	11.4	8.6	13.9	11.4	8.4
Cycle Q Clear(g_c), s	7.6	12.2	12.3	9.4	23.5	23.5	10.8	11.4	8.6	13.9	11.4	8.4
Prop In Lane	1.00		0.32	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	1534	797	242	1006	525	257	777	347	319	902	402
V/C Ratio(X)	0.83	0.44	0.45	0.29	0.92	0.92	0.86	0.64	0.50	0.89	0.58	0.44
Avail Cap(c_a), veh/h	190	1546	803	243	1012	528	302	777	347	330	902	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	16.8	16.8	25.4	30.4	30.4	37.3	31.7	30.6	35.8	29.1	27.9
Incr Delay (d2), s/veh	24.4	0.2	0.4	0.7	13.4	21.9	18.8	4.1	5.1	24.5	2.7	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.7	4.9	1.3	11.3	13.0	6.0	5.3	3.8	8.2	5.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.6	17.0	17.2	26.1	43.8	52.3	56.0	35.8	35.7	60.2	31.8	31.4
LnGrp LOS	E	B	B	C	D	D	E	D	D	E	C	C
Approach Vol, veh/h		1189			1483			895			983	
Approach Delay, s/veh		23.1			45.7			40.7			40.0	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	24.0		44.7	17.3	27.1	13.8	30.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	19.5		40.5	15.1	20.9	9.5	26.5
Max Q Clear Time (g_c+I1), s	15.9	13.4		14.3	12.8	13.4	9.6	25.5
Green Ext Time (p_c), s	0.1	2.1		8.3	0.1	2.5	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	447	245	190	639	0	261	0	164	0	0	0
Future Volume (veh/h)	0	447	245	190	639	0	261	0	164	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	486	266	207	695	0	284	0	178	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	809	361	284	1364	0	345	0	1485	0	556	0
Arrive On Green	0.00	0.23	0.23	0.08	0.38	0.00	0.10	0.00	0.47	0.00	0.00	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	3563	0	3170	0	1870	0
Grp Volume(v), veh/h	0	486	266	207	695	0	284	0	178	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	7.4	9.5	3.6	9.1	0.0	4.8	0.0	1.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.4	9.5	3.6	9.1	0.0	4.8	0.0	1.9	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	809	361	284	1364	0	345	0	1485	0	556	0
V/C Ratio(X)	0.00	0.60	0.74	0.73	0.51	0.00	0.82	0.00	0.12	0.00	0.00	0.00
Avail Cap(c_a), veh/h	146	1051	469	284	1364	0	345	0	1485	0	556	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	21.0	21.8	27.3	14.4	0.0	27.0	0.0	9.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	4.3	9.1	0.3	0.0	14.7	0.0	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	3.8	1.8	3.4	0.0	2.6	0.0	0.6	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	21.7	26.2	36.4	14.7	0.0	41.6	0.0	9.3	0.0	0.0	0.0
LnGrp LOS	A	C	C	D	B	A	D	A	A	A	A	A
Approach Vol, veh/h		752			902			462			0	
Approach Delay, s/veh		23.3			19.7			29.2			0.0	
Approach LOS		C			B			C				

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		33.0	9.5	18.4	10.4	22.6	0.0	27.9
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		28.5	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s		3.9	5.6	11.5	6.8	0.0	0.0	11.1
Green Ext Time (p_c), s		0.7	0.0	2.4	0.0	0.0	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	23.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	737	87	45	1014	96	157	369	45	222	355	152
Future Volume (veh/h)	71	737	87	45	1014	96	157	369	45	222	355	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	77	801	95	49	1102	104	171	401	49	241	386	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	1312	585	69	1156	109	350	698	312	362	496	209
Arrive On Green	0.06	0.37	0.37	0.04	0.35	0.35	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	1781	3282	309	1781	3554	1585	1781	2435	1027
Grp Volume(v), veh/h	77	801	95	49	596	610	171	401	49	241	280	271
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1815	1781	1777	1585	1781	1777	1686
Q Serve(g_s), s	4.0	17.2	3.8	2.5	30.6	30.7	8.0	9.6	2.4	11.7	14.0	14.3
Cycle Q Clear(g_c), s	4.0	17.2	3.8	2.5	30.6	30.7	8.0	9.6	2.4	11.7	14.0	14.3
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.61
Lane Grp Cap(c), veh/h	99	1312	585	69	626	639	350	698	312	362	362	343
V/C Ratio(X)	0.78	0.61	0.16	0.72	0.95	0.95	0.49	0.57	0.16	0.66	0.77	0.79
Avail Cap(c_a), veh/h	99	1312	585	131	628	642	350	698	312	481	480	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	24.0	19.8	44.5	29.5	29.6	33.4	34.1	31.2	34.3	35.3	35.4
Incr Delay (d2), s/veh	32.0	0.8	0.1	12.9	24.6	24.6	4.8	3.4	1.1	2.1	5.6	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	7.0	1.4	1.4	16.6	17.0	3.8	4.4	1.0	5.1	6.4	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.6	24.9	19.9	57.4	54.1	54.1	38.2	37.5	32.3	36.5	40.9	42.1
LnGrp LOS	E	C	B	E	D	D	D	D	C	D	D	D
Approach Vol, veh/h		973			1255			621			792	
Approach Delay, s/veh		28.4			54.3			37.3			40.0	
Approach LOS		C			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.9	8.1	39.1		23.6	9.7	37.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.4	6.9	31.4		25.3	5.2	33.1				
Max Q Clear Time (g_c+I1), s		11.6	4.5	19.2		16.3	6.0	32.7				
Green Ext Time (p_c), s		1.8	0.0	4.5		2.8	0.0	0.3				

Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	769	55	68	1185	111	79	372	59	77	424	100
Future Volume (veh/h)	89	769	55	68	1185	111	79	372	59	77	424	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	836	60	74	1288	121	86	404	64	84	461	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	1643	117	112	1560	147	318	1056	166	362	981	230
Arrive On Green	0.07	0.34	0.34	0.06	0.33	0.33	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	4864	348	1781	4748	446	842	3076	484	925	2856	671
Grp Volume(v), veh/h	97	584	312	74	923	486	86	232	236	84	286	284
Grp Sat Flow(s),veh/h/ln	1781	1702	1808	1781	1702	1790	842	1777	1783	925	1777	1750
Q Serve(g_s), s	2.8	7.2	7.3	2.1	13.2	13.2	4.7	5.2	5.3	4.0	6.6	6.7
Cycle Q Clear(g_c), s	2.8	7.2	7.3	2.1	13.2	13.2	11.4	5.2	5.3	9.3	6.6	6.7
Prop In Lane	1.00		0.19	1.00		0.25	1.00		0.27	1.00		0.38
Lane Grp Cap(c), veh/h	128	1150	610	112	1118	588	318	610	612	362	610	601
V/C Ratio(X)	0.76	0.51	0.51	0.66	0.83	0.83	0.27	0.38	0.39	0.23	0.47	0.47
Avail Cap(c_a), veh/h	179	1188	631	169	1169	615	318	610	612	362	610	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	14.0	14.0	24.2	16.3	16.3	18.0	13.1	13.1	16.6	13.5	13.6
Incr Delay (d2), s/veh	11.2	0.3	0.7	6.5	4.8	8.8	2.1	1.8	1.8	1.5	2.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.3	2.5	1.0	4.9	5.7	1.0	2.1	2.1	0.9	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	14.3	14.6	30.7	21.1	25.1	20.1	14.9	14.9	18.1	16.1	16.2
LnGrp LOS	D	B	B	C	C	C	C	B	B	B	B	B
Approach Vol, veh/h		993			1483			554			654	
Approach Delay, s/veh		16.4			22.9			15.7			16.4	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		22.6	7.8	22.3		22.6	8.3	21.8
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		18.1	5.0	18.4		18.1	5.3	18.1
Max Q Clear Time (g_c+I1), s		13.4	4.1	9.3		11.3	4.8	15.2
Green Ext Time (p_c), s		1.4	0.0	3.7		2.2	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	769	62	105	1089	80	168	556	55	180	466	113
Future Volume (veh/h)	92	769	62	105	1089	80	168	556	55	180	466	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	836	67	114	1184	87	183	604	60	196	507	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	1272	102	145	1328	98	223	988	441	236	1014	452
Arrive On Green	0.07	0.26	0.26	0.08	0.27	0.27	0.13	0.28	0.28	0.13	0.29	0.29
Sat Flow, veh/h	1781	4820	385	1781	4854	357	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	100	589	314	114	830	441	183	604	60	196	507	123
Grp Sat Flow(s),veh/h/ln	1781	1702	1801	1781	1702	1806	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.1	11.4	11.4	4.6	17.3	17.3	7.4	10.9	2.1	7.9	8.8	4.4
Cycle Q Clear(g_c), s	4.1	11.4	11.4	4.6	17.3	17.3	7.4	10.9	2.1	7.9	8.8	4.4
Prop In Lane	1.00		0.21	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	899	475	145	932	494	223	988	441	236	1014	452
V/C Ratio(X)	0.78	0.66	0.66	0.79	0.89	0.89	0.82	0.61	0.14	0.83	0.50	0.27
Avail Cap(c_a), veh/h	133	899	475	176	947	502	254	988	441	254	1014	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	24.2	24.2	33.2	25.7	25.7	31.5	23.1	20.0	31.2	22.0	20.4
Incr Delay (d2), s/veh	24.8	1.7	3.3	17.2	10.5	17.8	17.3	2.8	0.6	19.3	1.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.5	5.0	2.6	7.8	9.3	4.1	4.7	0.8	4.5	3.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	25.9	27.5	50.5	36.2	43.5	48.7	26.0	20.6	50.4	23.7	21.9
LnGrp LOS	E	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1003			1385			847			826	
Approach Delay, s/veh		29.6			39.7			30.5			29.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	25.0	10.5	24.0	13.7	25.5	9.8	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	20.5	7.3	18.7	10.5	20.5	5.5	20.5
Max Q Clear Time (g_c+I1), s	9.9	12.9	6.6	13.4	9.4	10.8	6.1	19.3
Green Ext Time (p_c), s	0.0	2.6	0.0	2.5	0.1	2.7	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	224	0	227	402	485	0	0	891	450
Future Volume (veh/h)	0	0	0	224	0	227	402	485	0	0	891	450
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				243	0	247	437	527	0	0	968	489
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				732	0	326	562	2218	0	0	1281	597
Arrive On Green				0.21	0.00	0.21	0.16	0.62	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	3572	1585
Grp Volume(v), veh/h				243	0	247	437	527	0	0	968	489
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				3.1	0.0	7.8	6.4	3.5	0.0	0.0	13.1	14.7
Cycle Q Clear(g_c), s				3.1	0.0	7.8	6.4	3.5	0.0	0.0	13.1	14.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				732	0	326	562	2218	0	0	1281	597
V/C Ratio(X)				0.33	0.00	0.76	0.78	0.24	0.00	0.00	0.76	0.82
Avail Cap(c_a), veh/h				1213	0	540	621	2218	0	0	1281	597
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				17.9	0.0	19.8	21.2	4.4	0.0	0.0	14.4	14.9
Incr Delay (d2), s/veh				0.3	0.0	3.6	5.7	0.3	0.0	0.0	4.2	12.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.1	0.0	2.7	2.8	0.9	0.0	0.0	5.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				18.2	0.0	23.4	26.9	4.6	0.0	0.0	18.5	26.8
LnGrp LOS				B	A	C	C	A	A	A	B	C
Approach Vol, veh/h					490			964			1457	
Approach Delay, s/veh					20.8			14.7			21.3	
Approach LOS					C			B			C	

Timer - Assigned Phs	2	5	6	8
Phs Duration (G+Y+Rc), s	37.5	13.1	24.4	15.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0	9.5	19.0	18.0
Max Q Clear Time (g_c+I1), s	5.5	8.4	16.7	9.8
Green Ext Time (p_c), s	3.8	0.2	1.8	1.1

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	0	234	0	0	0	0	841	296	275	777	0
Future Volume (veh/h)	54	0	234	0	0	0	0	841	296	275	777	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	39	0	275				0	914	322	299	845	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	248	0	441				0	1631	727	433	2404	0
Arrive On Green	0.14	0.00	0.14				0.00	0.46	0.46	0.13	0.68	0.00
Sat Flow, veh/h	1781	0	3170				0	3647	1585	3456	3647	0
Grp Volume(v), veh/h	39	0	275				0	914	322	299	845	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1728	1777	0
Q Serve(g_s), s	0.9	0.0	4.0				0.0	9.1	6.7	4.0	4.9	0.0
Cycle Q Clear(g_c), s	0.9	0.0	4.0				0.0	9.1	6.7	4.0	4.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	248	0	441				0	1631	727	433	2404	0
V/C Ratio(X)	0.16	0.00	0.62				0.00	0.56	0.44	0.69	0.35	0.00
Avail Cap(c_a), veh/h	657	0	1170				0	1631	727	538	2404	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.5	0.0	19.8				0.0	9.6	9.0	20.4	3.4	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.4				0.0	1.4	2.0	2.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.3				0.0	3.1	2.2	1.6	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	0.0	21.2				0.0	11.0	10.9	23.2	3.8	0.0
LnGrp LOS	B	A	C				A	B	B	C	A	A
Approach Vol, veh/h		314						1236			1144	
Approach Delay, s/veh		20.9						11.0			8.8	
Approach LOS		C						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.6	26.9		11.3		37.5
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	7.6	20.9		18.0		33.0
Max Q Clear Time (g_c+I1), s	6.0	11.1		6.0		6.9
Green Ext Time (p_c), s	0.2	5.2		0.9		6.6

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	16	58	11	97	22	793	113	59	874	8
Future Volume (veh/h)	4	9	16	58	11	97	22	793	113	59	874	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	10	17	63	12	105	24	862	123	64	950	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	76	107	340	50	184	485	1957	279	473	2262	21
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	96	598	843	1250	388	1442	586	3122	445	571	3607	34
Grp Volume(v), veh/h	31	0	0	75	0	105	24	491	494	64	468	491
Grp Sat Flow(s),veh/h/ln	1537	0	0	1639	0	1442	586	1777	1790	571	1777	1864
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.5	0.8	5.2	5.2	2.4	4.9	4.9
Cycle Q Clear(g_c), s	2.5	0.0	0.0	1.4	0.0	2.5	5.7	5.2	5.2	7.6	4.9	4.9
Prop In Lane	0.13		0.55	0.84		1.00	1.00		0.25	1.00		0.02
Lane Grp Cap(c), veh/h	307	0	0	390	0	184	485	1114	1123	473	1114	1169
V/C Ratio(X)	0.10	0.00	0.00	0.19	0.00	0.57	0.05	0.44	0.44	0.14	0.42	0.42
Avail Cap(c_a), veh/h	893	0	0	914	0	708	485	1114	1123	473	1114	1169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	0.0	14.6	0.0	15.1	4.9	3.5	3.5	5.5	3.5	3.5
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	2.8	0.2	1.3	1.3	0.6	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.5	0.0	0.8	0.1	1.0	1.0	0.2	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.4	0.0	0.0	14.8	0.0	17.8	5.1	4.8	4.8	6.1	4.6	4.6
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		31			180			1009			1023	
Approach Delay, s/veh		14.4			16.6			4.8			4.7	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.5		9.2		27.5		9.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		23.0		18.0		23.0		18.0				
Max Q Clear Time (g_c+I1), s		7.7		4.5		9.6		4.5				
Green Ext Time (p_c), s		6.0		0.1		5.5		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			5.8									
HCM 6th LOS			A									

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (veh/h)	167	341	0	690	315	1	937	331	0	0
Future Volume (veh/h)	167	341	0	690	315	1	937	331	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	182	371	0	750	342	1	1018	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	0	2	2	2	2	2		
Cap, veh/h	515	458	0	1747	789	82	1770			
Arrive On Green	0.29	0.29	0.00	0.51	0.51	0.51	0.51	0.00		
Sat Flow, veh/h	1781	1585	0	3609	1554	0	3486	1585		
Grp Volume(v), veh/h	182	371	0	742	350	546	473	0		
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1702	1591	1869	1617	1585		
Q Serve(g_s), s	3.6	9.6	0.0	6.1	6.2	0.0	9.0	0.0		
Cycle Q Clear(g_c), s	3.6	9.6	0.0	6.1	6.2	9.0	9.0	0.0		
Prop In Lane	1.00	1.00	0.00		0.98	0.00		1.00		
Lane Grp Cap(c), veh/h	515	458	0	1728	808	1030	821			
V/C Ratio(X)	0.35	0.81	0.00	0.43	0.43	0.53	0.58			
Avail Cap(c_a), veh/h	744	662	0	1728	808	1030	821			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	12.5	14.6	0.0	6.9	6.9	7.6	7.6	0.0		
Incr Delay (d2), s/veh	0.4	4.9	0.0	0.8	1.7	2.0	2.9	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	3.6	0.0	1.7	1.8	3.0	2.8	0.0		
Unsig. Movement Delay, s/veh										
LnGrp Delay(d),s/veh	12.9	19.5	0.0	7.6	8.6	9.5	10.5	0.0		
LnGrp LOS	B	B	A	A	A	A	B			
Approach Vol, veh/h	553			1092			1019	A		
Approach Delay, s/veh	17.3			7.9			10.0			
Approach LOS	B			A			A			

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		27.0		17.3		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		22.5		18.5		22.5
Max Q Clear Time (g_c+I1), s		8.2		11.6		11.0
Green Ext Time (p_c), s		6.5		1.2		5.1

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	689	192	181	1101	109	69	572	200	50	660	72
Future Volume (veh/h)	98	689	192	181	1101	109	69	572	200	50	660	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	749	209	197	1197	118	75	622	217	54	717	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	1054	291	243	1533	151	253	1328	592	278	1208	131
Arrive On Green	0.08	0.26	0.26	0.14	0.32	0.32	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	3978	1098	1781	4725	466	683	3554	1585	655	3233	351
Grp Volume(v), veh/h	107	640	318	197	862	453	75	622	217	54	394	401
Grp Sat Flow(s),veh/h/ln	1781	1702	1673	1781	1702	1787	683	1777	1585	655	1777	1807
Q Serve(g_s), s	3.5	10.2	10.4	6.4	13.8	13.8	6.0	8.0	6.0	4.1	10.7	10.7
Cycle Q Clear(g_c), s	3.5	10.2	10.4	6.4	13.8	13.8	16.7	8.0	6.0	12.1	10.7	10.7
Prop In Lane	1.00		0.66	1.00		0.26	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	137	902	443	243	1104	580	253	1328	592	278	664	675
V/C Ratio(X)	0.78	0.71	0.72	0.81	0.78	0.78	0.30	0.47	0.37	0.19	0.59	0.59
Avail Cap(c_a), veh/h	187	1021	502	288	1214	637	253	1328	592	278	664	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	20.0	20.0	25.1	18.3	18.3	21.8	14.3	13.6	18.9	15.1	15.1
Incr Delay (d2), s/veh	13.5	2.0	4.3	13.7	3.1	5.7	3.0	1.2	1.7	1.6	3.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.9	4.1	3.4	5.2	5.9	1.1	3.1	2.1	0.7	4.5	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	22.0	24.3	38.9	21.4	24.1	24.8	15.5	15.4	20.4	19.0	19.0
LnGrp LOS	D	C	C	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		1065			1512			914			849	
Approach Delay, s/veh		24.5			24.5			16.2			19.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		26.9	12.7	20.4		26.9	9.1	24.0
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		18.8	9.7	18.0		18.8	6.3	21.4
Max Q Clear Time (g_c+I1), s		18.7	8.4	12.4		14.1	5.5	15.8
Green Ext Time (p_c), s		0.1	0.1	2.9		2.3	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	834	75	205	1268	124	89	475	188	59	329	113
Future Volume (veh/h)	110	834	75	205	1268	124	89	475	188	59	329	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	907	82	223	1378	135	97	516	204	64	358	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	1393	126	273	1699	166	346	1126	502	274	1126	502
Arrive On Green	0.09	0.29	0.29	0.15	0.36	0.36	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	4767	430	1781	4728	463	914	3554	1585	732	3554	1585
Grp Volume(v), veh/h	120	647	342	223	992	521	97	516	204	64	358	123
Grp Sat Flow(s),veh/h/ln	1781	1702	1793	1781	1702	1787	914	1777	1585	732	1777	1585
Q Serve(g_s), s	3.8	9.4	9.5	6.9	15.0	15.0	5.1	6.6	5.7	4.3	4.3	3.3
Cycle Q Clear(g_c), s	3.8	9.4	9.5	6.9	15.0	15.0	9.5	6.6	5.7	10.9	4.3	3.3
Prop In Lane	1.00		0.24	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	995	524	273	1223	642	346	1126	502	274	1126	502
V/C Ratio(X)	0.78	0.65	0.65	0.82	0.81	0.81	0.28	0.46	0.41	0.23	0.32	0.24
Avail Cap(c_a), veh/h	216	1078	568	329	1294	679	346	1126	502	274	1126	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	17.6	17.6	23.3	16.5	16.5	18.3	15.5	15.2	19.9	14.7	14.4
Incr Delay (d2), s/veh	11.2	1.2	2.4	12.5	3.8	7.1	2.0	1.3	2.4	2.0	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.4	3.8	3.6	5.6	6.4	1.2	2.6	2.1	0.8	1.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	18.8	20.0	35.8	20.3	23.5	20.4	16.9	17.7	21.9	15.5	15.5
LnGrp LOS	D	B	B	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		1109			1736			817			545	
Approach Delay, s/veh		21.1			23.3			17.5			16.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	13.2	21.1		22.5	9.4	24.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	10.5	18.0		18.0	6.9	21.6				
Max Q Clear Time (g_c+I1), s		11.5	8.9	11.5		12.9	5.8	17.0				
Green Ext Time (p_c), s		2.6	0.1	3.3		1.4	0.0	3.4				

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	883	77	35	1255	181	86	530	22	142	365	264
Future Volume (veh/h)	174	883	77	35	1255	181	86	530	22	142	365	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	960	84	38	1364	197	93	576	24	154	397	287
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	1936	169	65	1430	206	325	871	36	300	930	415
Arrive On Green	0.12	0.40	0.40	0.04	0.32	0.32	0.06	0.25	0.25	0.07	0.26	0.26
Sat Flow, veh/h	1781	4782	417	1781	4507	651	1781	3476	145	1781	3554	1585
Grp Volume(v), veh/h	189	683	361	38	1030	531	93	294	306	154	397	287
Grp Sat Flow(s),veh/h/ln	1781	1702	1795	1781	1702	1753	1781	1777	1844	1781	1777	1585
Q Serve(g_s), s	7.8	11.2	11.2	1.6	22.2	22.2	2.9	11.1	11.2	4.8	7.0	12.2
Cycle Q Clear(g_c), s	7.8	11.2	11.2	1.6	22.2	22.2	2.9	11.1	11.2	4.8	7.0	12.2
Prop In Lane	1.00		0.23	1.00		0.37	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	221	1378	727	65	1080	556	325	445	462	300	930	415
V/C Ratio(X)	0.86	0.50	0.50	0.59	0.95	0.95	0.29	0.66	0.66	0.51	0.43	0.69
Avail Cap(c_a), veh/h	221	1378	727	140	1080	556	345	445	462	300	930	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	16.6	16.6	35.6	25.1	25.1	19.2	25.2	25.2	20.1	23.0	25.0
Incr Delay (d2), s/veh	26.5	0.3	0.5	8.1	17.4	27.0	0.5	7.5	7.3	1.5	1.4	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	4.0	4.3	0.8	10.8	12.6	1.2	5.4	5.6	2.1	3.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.7	16.9	17.2	43.7	42.4	52.1	19.7	32.7	32.5	21.6	24.5	34.1
LnGrp LOS	E	B	B	D	D	D	B	C	C	C	C	C
Approach Vol, veh/h		1233			1599			693			838	
Approach Delay, s/veh		23.4			45.7			30.9			27.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	23.3	7.2	34.9	8.8	24.1	13.8	28.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	18.8	5.9	27.2	5.1	18.8	9.3	23.8
Max Q Clear Time (g_c+I1), s	6.8	13.2	3.6	13.2	4.9	14.2	9.8	24.2
Green Ext Time (p_c), s	0.0	1.8	0.0	5.7	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1048	11	235	1339	63	130	973	239	90	433	153
Future Volume (veh/h)	225	1048	11	235	1339	63	130	973	239	90	433	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	245	1139	12	255	1455	68	141	1058	260	98	471	166
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	1497	16	278	1475	69	433	1059	259	146	1056	471
Arrive On Green	0.15	0.29	0.29	0.16	0.30	0.30	0.13	0.37	0.37	0.05	0.30	0.30
Sat Flow, veh/h	1781	5210	55	1781	4999	234	1781	2831	692	1781	3554	1585
Grp Volume(v), veh/h	245	744	407	255	991	532	141	662	656	98	471	166
Grp Sat Flow(s),veh/h/ln	1781	1702	1860	1781	1702	1828	1781	1777	1746	1781	1777	1585
Q Serve(g_s), s	18.9	27.8	27.8	19.6	40.3	40.3	6.7	51.8	52.1	5.3	15.0	11.5
Cycle Q Clear(g_c), s	18.9	27.8	27.8	19.6	40.3	40.3	6.7	51.8	52.1	5.3	15.0	11.5
Prop In Lane	1.00		0.03	1.00		0.13	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	265	978	535	278	1004	539	433	665	653	146	1056	471
V/C Ratio(X)	0.93	0.76	0.76	0.92	0.99	0.99	0.33	1.00	1.00	0.67	0.45	0.35
Avail Cap(c_a), veh/h	265	978	535	300	1004	539	433	665	653	283	1329	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	45.3	45.3	57.9	48.8	48.8	24.8	43.5	43.6	37.3	39.7	38.4
Incr Delay (d2), s/veh	36.0	3.5	6.3	29.9	25.1	35.2	2.0	34.0	36.4	5.2	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	12.0	13.6	11.0	20.2	23.2	3.0	28.3	28.4	2.5	6.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.6	48.8	51.6	87.8	73.9	84.0	26.8	77.5	80.0	42.4	40.0	38.9
LnGrp LOS	F	D	D	F	E	F	C	E	F	D	D	D
Approach Vol, veh/h		1396			1778			1459			735	
Approach Delay, s/veh		57.7			78.9			73.7			40.0	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	56.6	26.3	44.5	22.6	45.9	25.2	45.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.1	52.1	23.5	38.3	18.1	52.1	20.7	41.1
Max Q Clear Time (g_c+I1), s	7.3	54.1	21.6	29.8	8.7	17.0	20.9	42.3
Green Ext Time (p_c), s	0.1	0.0	0.1	4.4	0.2	3.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	66.7
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	864	214	176	1020	208	175	555	86	196	931	131
Future Volume (veh/h)	118	864	214	176	1020	208	175	555	86	196	931	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	939	233	191	1109	226	190	603	93	213	1012	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	1093	270	216	1098	490	202	1214	185	249	1058	472
Arrive On Green	0.08	0.27	0.27	0.12	0.31	0.31	0.11	0.27	0.27	0.14	0.30	0.30
Sat Flow, veh/h	1781	4083	1010	1781	3554	1585	1781	4472	680	1781	3554	1585
Grp Volume(v), veh/h	128	782	390	191	1109	226	190	457	239	213	1012	142
Grp Sat Flow(s),veh/h/ln	1781	1702	1689	1781	1777	1585	1781	1702	1748	1781	1777	1585
Q Serve(g_s), s	6.4	19.7	19.8	9.5	27.8	10.3	9.5	10.2	10.4	10.5	25.2	6.2
Cycle Q Clear(g_c), s	6.4	19.7	19.8	9.5	27.8	10.3	9.5	10.2	10.4	10.5	25.2	6.2
Prop In Lane	1.00		0.60	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	143	912	452	216	1098	490	202	924	474	249	1058	472
V/C Ratio(X)	0.90	0.86	0.86	0.89	1.01	0.46	0.94	0.49	0.50	0.86	0.96	0.30
Avail Cap(c_a), veh/h	143	912	452	216	1098	490	202	924	474	287	1058	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	31.3	31.4	38.9	31.1	25.1	39.6	27.6	27.7	37.8	31.0	24.4
Incr Delay (d2), s/veh	46.5	8.2	15.5	32.4	29.7	0.7	46.8	1.9	3.8	19.7	19.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	8.6	9.5	5.9	15.6	3.8	6.6	4.2	4.6	5.8	12.8	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.5	39.6	46.9	71.4	60.8	25.7	86.4	29.5	31.5	57.5	50.0	26.0
LnGrp LOS	F	D	D	E	F	C	F	C	C	E	D	C
Approach Vol, veh/h		1300			1526			886			1367	
Approach Delay, s/veh		46.5			56.9			42.2			48.7	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	28.9	15.4	28.6	14.7	31.3	11.7	32.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	22.5	10.9	24.1	10.2	26.8	7.2	27.8
Max Q Clear Time (g_c+I1), s	12.5	12.4	11.5	21.8	11.5	27.2	8.4	29.8
Green Ext Time (p_c), s	0.1	3.0	0.0	1.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	49.5
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	687	247	227	886	30	294	641	209	108	1173	153
Future Volume (veh/h)	86	687	247	227	886	30	294	641	209	108	1173	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	747	268	247	963	33	320	697	227	117	1275	166
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	1162	361	337	1335	46	416	1641	509	149	1654	214
Arrive On Green	0.06	0.23	0.23	0.10	0.26	0.26	0.12	0.32	0.32	0.08	0.28	0.28
Sat Flow, veh/h	3456	5106	1585	3456	5070	174	3456	5106	1585	1781	5807	753
Grp Volume(v), veh/h	93	747	268	247	646	350	320	697	227	117	1059	382
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1839	1728	1702	1585	1781	1609	1735
Q Serve(g_s), s	1.7	8.8	10.5	4.6	11.5	11.5	6.0	7.2	7.6	4.3	13.4	13.5
Cycle Q Clear(g_c), s	1.7	8.8	10.5	4.6	11.5	11.5	6.0	7.2	7.6	4.3	13.4	13.5
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	213	1162	361	337	897	484	416	1641	509	149	1374	494
V/C Ratio(X)	0.44	0.64	0.74	0.73	0.72	0.72	0.77	0.42	0.45	0.78	0.77	0.77
Avail Cap(c_a), veh/h	264	1378	428	337	990	535	440	1641	509	195	1374	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	23.3	24.0	29.3	22.3	22.3	28.4	17.8	17.9	30.0	21.9	21.9
Incr Delay (d2), s/veh	1.4	0.8	5.7	8.0	2.3	4.3	7.7	0.8	2.8	14.2	4.2	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.3	4.1	2.2	4.4	5.0	2.7	2.5	2.8	2.3	4.9	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	24.1	29.7	37.3	24.7	26.6	36.1	18.6	20.7	44.1	26.1	33.1
LnGrp LOS	C	C	C	D	C	C	D	B	C	D	C	C
Approach Vol, veh/h		1108			1243			1244			1558	
Approach Delay, s/veh		26.1			27.7			23.5			29.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	25.9	11.0	19.7	12.5	23.5	8.6	22.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.3	20.2	6.5	18.0	8.5	19.0	5.1	19.4
Max Q Clear Time (g_c+I1), s	6.3	9.6	6.6	12.5	8.0	15.5	3.7	13.5
Green Ext Time (p_c), s	0.0	3.8	0.0	2.7	0.1	2.5	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	416	22	208	1377	200	148	1277	275	249	1304	571
Future Volume (veh/h)	312	416	22	208	1377	200	148	1277	275	249	1304	571
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	339	452	24	226	1497	217	161	1388	299	271	1417	621
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	569	30	962	1421	441	765	1424	351	916	1353	739
Arrive On Green	0.11	0.11	0.11	0.28	0.28	0.28	0.22	0.22	0.22	0.26	0.26	0.26
Sat Flow, veh/h	3456	4966	262	3456	5106	1585	3456	6434	1585	3456	5106	2790
Grp Volume(v), veh/h	339	309	167	226	1497	217	161	1388	299	271	1417	621
Grp Sat Flow(s),veh/h/ln	1728	1702	1823	1728	1702	1585	1728	1609	1585	1728	1702	1395
Q Serve(g_s), s	14.4	13.2	13.3	7.5	41.5	17.1	5.7	31.9	27.0	9.3	39.5	31.4
Cycle Q Clear(g_c), s	14.4	13.2	13.3	7.5	41.5	17.1	5.7	31.9	27.0	9.3	39.5	31.4
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	396	390	209	962	1421	441	765	1424	351	916	1353	739
V/C Ratio(X)	0.86	0.79	0.80	0.23	1.05	0.49	0.21	0.97	0.85	0.30	1.05	0.84
Avail Cap(c_a), veh/h	417	411	220	962	1421	441	765	1424	351	916	1353	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	64.3	64.3	41.5	53.8	45.0	47.4	57.6	55.7	43.7	54.8	51.8
Incr Delay (d2), s/veh	15.4	9.7	18.0	0.1	39.2	0.8	0.6	18.5	22.2	0.8	37.9	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	6.2	7.2	3.2	22.6	6.8	2.5	14.5	12.7	4.1	21.2	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.2	74.0	82.3	41.7	93.0	45.8	48.0	76.1	77.9	44.5	92.7	62.9
LnGrp LOS	F	E	F	D	F	D	D	E	E	D	F	E
Approach Vol, veh/h		815			1940			1848			2309	
Approach Delay, s/veh		78.3			81.8			74.0			79.0	
Approach LOS		E			F			E			E	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.5		21.6		44.0		46.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		33.0		18.0		39.5		41.5				
Max Q Clear Time (g_c+I1), s		33.9		16.4		41.5		43.5				
Green Ext Time (p_c), s		0.0		0.7		0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			78.3
HCM 6th LOS			E

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	69	377	24	378	400	37	80	640	352	79	959	82
Future Volume (veh/h)	69	377	24	378	400	37	80	640	352	79	959	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	410	26	411	435	40	87	696	383	86	1042	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	787	351	408	1408	628	171	974	454	110	989	84
Arrive On Green	0.05	0.22	0.22	0.23	0.40	0.40	0.05	0.29	0.29	0.06	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3404	1585	1781	3313	283
Grp Volume(v), veh/h	75	410	26	411	435	40	87	696	383	86	559	572
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1781	1777	1819
Q Serve(g_s), s	3.7	9.1	1.2	20.5	7.5	1.4	2.2	16.4	20.3	4.3	26.7	26.7
Cycle Q Clear(g_c), s	3.7	9.1	1.2	20.5	7.5	1.4	2.2	16.4	20.3	4.3	26.7	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	97	787	351	408	1408	628	171	974	454	110	531	543
V/C Ratio(X)	0.77	0.52	0.07	1.01	0.31	0.06	0.51	0.71	0.84	0.78	1.05	1.05
Avail Cap(c_a), veh/h	187	787	351	408	1408	628	193	974	454	141	531	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	30.6	27.6	34.5	18.6	16.7	41.4	28.6	30.0	41.4	31.4	31.4
Incr Delay (d2), s/veh	12.3	2.5	0.4	46.2	0.6	0.2	2.3	2.5	13.6	18.9	53.7	53.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.0	0.5	13.6	3.0	0.5	1.0	6.8	9.2	2.4	18.9	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	33.1	28.0	80.6	19.1	16.9	43.8	31.1	43.6	60.2	85.1	84.9
LnGrp LOS	D	C	C	F	B	B	D	C	D	E	F	F
Approach Vol, veh/h		511			886			1166			1217	
Approach Delay, s/veh		35.9			47.6			36.2			83.2	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	39.9	10.0	30.1	25.0	24.3	8.9	31.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.4	30.9	7.1	24.6	20.5	19.8	5.0	26.7
Max Q Clear Time (g_c+I1), s	5.7	9.5	6.3	22.3	22.5	11.1	4.2	28.7
Green Ext Time (p_c), s	0.0	2.7	0.0	1.5	0.0	1.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	212	571	40	113	58	403	1366	51	89	779	21
Future Volume (veh/h)	24	212	571	40	113	58	403	1366	51	89	779	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	230	621	43	123	63	438	1485	55	97	847	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	823	391	182	538	391	479	1822	813	124	1107	30
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.27	0.51	0.51	0.07	0.31	0.31
Sat Flow, veh/h	99	3333	1585	454	2178	1585	1781	3554	1585	1781	3534	96
Grp Volume(v), veh/h	256	0	621	80	86	63	438	1485	55	97	426	444
Grp Sat Flow(s),veh/h/ln	1815	1617	1585	1015	1617	1585	1781	1777	1585	1781	1777	1853
Q Serve(g_s), s	0.7	0.0	19.5	2.0	3.3	2.5	18.8	27.6	1.4	4.2	17.1	17.1
Cycle Q Clear(g_c), s	9.5	0.0	19.5	3.7	3.3	2.5	18.8	27.6	1.4	4.2	17.1	17.1
Prop In Lane	0.10		1.00	0.53		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	498	399	391	320	399	391	479	1822	813	124	557	581
V/C Ratio(X)	0.51	0.00	1.59	0.25	0.21	0.16	0.91	0.82	0.07	0.78	0.76	0.76
Avail Cap(c_a), veh/h	498	399	391	320	399	391	530	1822	813	147	557	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	29.7	23.5	23.7	23.3	28.0	16.1	9.7	36.2	24.5	24.5
Incr Delay (d2), s/veh	0.9	0.0	276.1	0.4	0.3	0.2	19.4	4.1	0.2	20.4	9.6	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	37.1	1.2	1.3	0.9	10.0	10.4	0.5	2.5	8.1	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	305.9	24.0	23.9	23.5	47.4	20.3	9.9	56.5	34.1	33.8
LnGrp LOS	C	A	F	C	C	C	D	C	A	E	C	C
Approach Vol, veh/h		877			229			1978			967	
Approach Delay, s/veh		224.4			23.8			26.0			36.2	
Approach LOS		F			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	45.0		24.0	25.7	29.3		24.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	6.5	40.5		19.5	23.5	23.5		19.5
Max Q Clear Time (g_c+I1), s	6.2	29.6		21.5	20.8	19.1		5.7
Green Ext Time (p_c), s	0.0	7.2		0.0	0.4	2.0		1.1

Intersection Summary	
HCM 6th Ctrl Delay	71.3
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	1856	183	0	1247	477	538	883	5	129	1165	4
Future Volume (veh/h)	0	1856	183	0	1247	477	538	883	5	129	1165	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	2017	199	0	1355	518	585	960	5	140	1266	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	2019	197	0	1517	677	598	1790	9	172	1393	4
Arrive On Green	0.00	0.43	0.43	0.00	0.43	0.43	0.17	0.34	0.34	0.10	0.26	0.26
Sat Flow, veh/h	0	4897	463	0	3647	1585	3456	5242	27	1781	5255	17
Grp Volume(v), veh/h	0	1447	769	0	1355	518	585	623	342	140	820	450
Grp Sat Flow(s),veh/h/ln	0	1702	1787	0	1777	1585	1728	1702	1865	1781	1702	1867
Q Serve(g_s), s	0.0	42.4	42.7	0.0	35.3	27.8	16.9	14.8	14.8	7.7	23.3	23.3
Cycle Q Clear(g_c), s	0.0	42.4	42.7	0.0	35.3	27.8	16.9	14.8	14.8	7.7	23.3	23.3
Prop In Lane	0.00		0.26	0.00		1.00	1.00		0.01	1.00		0.01
Lane Grp Cap(c), veh/h	0	1454	763	0	1517	677	598	1162	637	172	902	495
V/C Ratio(X)	0.00	1.00	1.01	0.00	0.89	0.77	0.98	0.54	0.54	0.81	0.91	0.91
Avail Cap(c_a), veh/h	0	1454	763	0	1517	677	598	1162	637	274	902	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	28.6	28.7	0.0	26.5	24.4	41.2	26.5	26.5	44.3	35.6	35.6
Incr Delay (d2), s/veh	0.0	22.5	34.5	0.0	7.2	5.2	31.3	1.8	3.2	9.6	14.7	23.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.3	24.0	0.0	15.3	23.6	9.5	6.0	6.8	3.8	11.1	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	51.1	63.1	0.0	33.7	29.6	72.5	28.3	29.8	53.8	50.3	58.8
LnGrp LOS	A	D	F	A	C	C	E	C	C	D	D	E
Approach Vol, veh/h		2216			1873			1550			1410	
Approach Delay, s/veh		55.2			32.6			45.3			53.3	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.8	31.0		47.2	14.2	38.6		47.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	17.3	26.5		42.7	15.4	28.4		42.7
Max Q Clear Time (g_c+I1), s	18.9	25.3		44.7	9.7	16.8		37.3
Green Ext Time (p_c), s	0.0	0.8		0.0	0.1	4.6		4.2

Intersection Summary		
HCM 6th Ctrl Delay		46.7
HCM 6th LOS		D

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	90	422	73	239	121	0	78	959	36	25	1273	314
Future Volume (veh/h)	90	422	73	239	121	0	78	959	36	25	1273	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	459	79	260	132	0	85	1042	39	27	1384	341
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	623	757	337	433	758		165	2420	90	264	2446	759
Arrive On Green	0.21	0.21	0.21	0.15	0.15	0.00	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	1781	5106	1585	282	5051	189	522	5106	1585
Grp Volume(v), veh/h	98	459	79	260	132	0	85	702	379	27	1384	341
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1702	1585	282	1702	1836	522	1702	1585
Q Serve(g_s), s	3.0	9.9	3.5	10.2	1.9	0.0	24.1	11.4	11.5	3.0	16.4	12.1
Cycle Q Clear(g_c), s	3.0	9.9	3.5	10.2	1.9	0.0	40.5	11.4	11.5	14.5	16.4	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	623	757	337	433	758		165	1631	880	264	2446	759
V/C Ratio(X)	0.16	0.61	0.23	0.60	0.17		0.51	0.43	0.43	0.10	0.57	0.45
Avail Cap(c_a), veh/h	623	757	337	548	1087		165	1631	880	264	2446	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	30.1	27.6	24.6	31.5	0.0	30.9	14.5	14.5	19.2	15.7	14.6
Incr Delay (d2), s/veh	0.5	3.6	1.6	1.3	0.1	0.0	2.7	0.2	0.3	0.2	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.5	1.4	4.3	0.8	0.0	1.8	4.2	4.5	0.4	6.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	33.7	29.2	26.0	31.6	0.0	33.6	14.6	14.8	19.4	16.0	15.0
LnGrp LOS	B	C	C	C	C		C	B	B	B	B	B
Approach Vol, veh/h		636			392	A		1166			1752	
Approach Delay, s/veh		30.6			27.9			16.1			15.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.0	22.5		45.0	22.5	17.0		45.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.0	18.0		40.5	18.0	18.0		40.5
Max Q Clear Time (g_c+I1), s	12.2	11.9		42.5	5.0	3.9		18.4
Green Ext Time (p_c), s	0.4	1.7		0.0	0.2	0.6		12.6

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	234	1269	427	330	956	316	250	945	172	404	1166	323
Future Volume (veh/h)	234	1269	427	330	956	316	250	945	172	404	1166	323
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	1384	461	359	1039	343	272	1027	187	439	1267	351
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1622	458	387	1581	491	304	1388	431	509	1316	364
Arrive On Green	0.09	0.29	0.29	0.11	0.31	0.31	0.09	0.27	0.27	0.15	0.33	0.33
Sat Flow, veh/h	3563	5611	1585	3456	5106	1585	3456	5106	1585	3456	3976	1100
Grp Volume(v), veh/h	254	1384	461	359	1039	343	272	1027	187	439	1085	533
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1702	1585	1728	1702	1585	1728	1702	1672
Q Serve(g_s), s	7.0	23.3	28.9	10.3	17.6	19.1	7.8	18.3	9.7	12.4	31.3	31.3
Cycle Q Clear(g_c), s	7.0	23.3	28.9	10.3	17.6	19.1	7.8	18.3	9.7	12.4	31.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	326	1622	458	387	1581	491	304	1388	431	509	1127	554
V/C Ratio(X)	0.78	0.85	1.01	0.93	0.66	0.70	0.89	0.74	0.43	0.86	0.96	0.96
Avail Cap(c_a), veh/h	395	1622	458	387	1581	491	304	1388	431	556	1127	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	33.6	35.5	44.0	29.9	30.4	45.1	33.2	30.1	41.7	32.8	32.9
Incr Delay (d2), s/veh	8.0	4.7	43.6	28.3	1.0	4.4	26.8	3.6	3.2	12.4	19.2	30.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.5	15.8	5.7	6.8	7.3	4.4	7.7	3.9	6.0	15.1	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	38.2	79.2	72.3	30.9	34.8	71.9	36.8	33.2	54.1	52.0	63.1
LnGrp LOS	D	D	F	E	C	C	E	D	C	D	D	E
Approach Vol, veh/h		2099			1741			1486			2057	
Approach Delay, s/veh		48.9			40.2			42.8			55.4	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	37.6	15.7	33.4	19.2	31.7	13.6	35.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.8	33.1	11.2	28.9	16.1	25.8	11.1	29.0
Max Q Clear Time (g_c+I1), s	9.8	33.3	12.3	30.9	14.4	20.3	9.0	21.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.3	3.2	0.2	4.5

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	939	80	0	1077	366	0	0	79	472	92	696
Future Volume (vph)	0	939	80	0	1077	366	0	0	79	472	92	696
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor		0.86			0.91	1.00			1.00	0.97	0.91	0.91
Frt		0.99			1.00	0.85			0.86	1.00	0.88	0.85
Flt Protected		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (prot)		6332			5085	1583			1611	3433	2988	1441
Flt Permitted		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (perm)		6332			5085	1583			1611	3433	2988	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1021	87	0	1171	398	0	0	86	513	100	757
RTOR Reduction (vph)	0	22	0	0	0	279	0	0	60	0	2	12
Lane Group Flow (vph)	0	1086	0	0	1171	119	0	0	26	513	477	366
Turn Type		NA			NA	Perm			Perm	Prot	NA	Perm
Protected Phases		4			8					1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)		18.0			18.0	18.0			18.0	10.5	33.0	33.0
Effective Green, g (s)		18.0			18.0	18.0			18.0	10.5	33.0	33.0
Actuated g/C Ratio		0.30			0.30	0.30			0.30	0.18	0.55	0.55
Clearance Time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1899			1525	474			483	600	1643	792
v/s Ratio Prot		0.17			c0.23					c0.15	0.16	
v/s Ratio Perm						0.08			0.02			c0.25
v/c Ratio		0.57			0.77	0.25			0.05	0.85	0.29	0.46
Uniform Delay, d1		17.7			19.1	15.9			14.9	24.0	7.2	8.1
Progression Factor		1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4			2.4	0.3			0.2	11.4	0.4	1.9
Delay (s)		18.2			21.5	16.2			15.1	35.5	7.7	10.1
Level of Service		B			C	B			B	D	A	B
Approach Delay (s)		18.2			20.1			15.1			18.7	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1258	0	0	1175	813	269	0	315	0	0	0
Future Volume (vph)	0	1258	0	0	1175	813	269	0	315	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5	4.5		4.5			
Lane Util. Factor		0.86			0.95	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		6408			3539	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		6408			3539	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1367	0	0	1277	884	292	0	342	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	429	0	0	38	0	0	0
Lane Group Flow (vph)	0	1367	0	0	1277	455	292	0	304	0	0	0
Turn Type		NA			NA	Perm	Perm		Perm			
Protected Phases		4			8							
Permitted Phases						8	2		2			
Actuated Green, G (s)		30.2			30.2	30.2	19.5		19.5			
Effective Green, g (s)		30.2			30.2	30.2	19.5		19.5			
Actuated g/C Ratio		0.51			0.51	0.51	0.33		0.33			
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		3296			1820	814	1140		925			
v/s Ratio Prot		0.21			c0.36							
v/s Ratio Perm						0.29	0.09		c0.11			
v/c Ratio		0.41			0.70	0.56	0.26		0.33			
Uniform Delay, d1		8.8			10.8	9.7	14.3		14.7			
Progression Factor		1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			1.2	0.8	0.5		0.9			
Delay (s)		8.9			12.1	10.5	14.8		15.6			
Level of Service		A			B	B	B		B			
Approach Delay (s)		8.9			11.4			15.3			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	1144	153	103	1059	171	228	480	140	256	537	145
Future Volume (veh/h)	93	1144	153	103	1059	171	228	480	140	256	537	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	1243	166	112	1151	186	248	522	152	278	584	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	2207	295	191	1649	266	269	758	338	271	762	340
Arrive On Green	0.06	0.48	0.48	0.37	0.37	0.37	0.15	0.21	0.21	0.15	0.21	0.21
Sat Flow, veh/h	1781	4556	608	382	4430	716	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	101	929	480	112	884	453	248	522	152	278	584	158
Grp Sat Flow(s),veh/h/ln	1781	1702	1761	382	1702	1742	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.1	17.4	17.4	26.2	19.8	19.8	12.4	12.2	7.5	13.7	13.9	7.8
Cycle Q Clear(g_c), s	5.1	17.4	17.4	33.5	19.8	19.8	12.4	12.2	7.5	13.7	13.9	7.8
Prop In Lane	1.00		0.35	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	1649	853	191	1267	648	269	758	338	271	762	340
V/C Ratio(X)	0.91	0.56	0.56	0.59	0.70	0.70	0.92	0.69	0.45	1.03	0.77	0.46
Avail Cap(c_a), veh/h	111	1649	853	191	1267	648	269	758	338	271	762	340
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	16.4	16.4	32.0	24.0	24.0	37.7	32.6	30.8	38.2	33.2	30.8
Incr Delay (d2), s/veh	58.3	0.4	0.9	4.6	1.7	3.3	34.7	5.1	4.3	61.3	7.2	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	6.6	7.0	2.6	8.1	8.6	7.9	5.7	3.3	10.5	6.7	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.3	16.9	17.3	36.6	25.7	27.3	72.4	37.7	35.1	99.5	40.5	35.4
LnGrp LOS	F	B	B	D	C	C	E	D	D	F	D	D
Approach Vol, veh/h		1510			1449			922			1020	
Approach Delay, s/veh		22.6			27.0			46.6			55.8	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	23.7		48.1	18.1	23.8	10.1	38.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.7	19.2		43.6	13.6	19.3	5.6	33.5
Max Q Clear Time (g_c+I1), s	15.7	14.2		19.4	14.4	15.9	7.1	35.5
Green Ext Time (p_c), s	0.0	1.8		11.7	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	933	254	188	421	0	416	0	404	2	0	1
Future Volume (veh/h)	0	933	254	188	421	0	416	0	404	2	0	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1014	276	204	458	0	452	0	439	2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1086	484	251	1544	0	535	0	1436	246	15	93
Arrive On Green	0.00	0.31	0.31	0.07	0.43	0.00	0.15	0.00	0.45	0.25	0.00	0.25
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	3563	0	3170	694	60	377
Grp Volume(v), veh/h	0	1014	276	204	458	0	452	0	439	3	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	0	1585	1130	0	0
Q Serve(g_s), s	0.0	22.2	11.7	4.6	6.7	0.0	9.9	0.0	7.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	22.2	11.7	4.6	6.7	0.0	9.9	0.0	7.0	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.67		0.33
Lane Grp Cap(c), veh/h	2	1086	484	251	1544	0	535	0	1436	354	0	0
V/C Ratio(X)	0.00	0.93	0.57	0.81	0.30	0.00	0.84	0.00	0.31	0.01	0.00	0.00
Avail Cap(c_a), veh/h	111	1089	486	251	1544	0	557	0	1436	354	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	27.0	23.3	36.5	14.7	0.0	33.1	0.0	13.9	22.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	14.1	1.6	18.2	0.1	0.0	11.1	0.0	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.2	4.5	2.6	2.6	0.0	5.0	0.0	2.5	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	41.1	24.9	54.7	14.8	0.0	44.2	0.0	14.4	22.8	0.0	0.0
LnGrp LOS	A	D	C	D	B	A	D	A	B	C	A	A
Approach Vol, veh/h		1290			662			891			3	
Approach Delay, s/veh		37.6			27.1			29.5			22.8	
Approach LOS		D			C			C			C	

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		40.7	10.3	28.9	16.5	24.2	0.0	39.2
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		36.2	5.8	24.5	12.5	19.2	5.0	25.3
Max Q Clear Time (g_c+I1), s		9.0	6.6	24.2	11.9	2.1	0.0	8.7
Green Ext Time (p_c), s		1.9	0.0	0.3	0.1	0.0	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	960	37	52	784	65	199	607	111	170	241	101
Future Volume (veh/h)	94	960	37	52	784	65	199	607	111	170	241	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	102	1043	40	57	852	71	216	660	121	185	262	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	1153	514	81	987	82	428	853	380	281	388	158
Arrive On Green	0.07	0.32	0.32	0.05	0.30	0.30	0.24	0.24	0.24	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3321	277	1781	3554	1585	1781	2461	1006
Grp Volume(v), veh/h	102	1043	40	57	456	467	216	660	121	185	187	185
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1821	1781	1777	1585	1781	1777	1689
Q Serve(g_s), s	4.4	21.7	1.4	2.4	18.8	18.8	8.1	13.4	4.9	7.6	7.7	8.0
Cycle Q Clear(g_c), s	4.4	21.7	1.4	2.4	18.8	18.8	8.1	13.4	4.9	7.6	7.7	8.0
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	130	1153	514	81	528	541	428	853	380	281	280	266
V/C Ratio(X)	0.78	0.90	0.08	0.70	0.86	0.86	0.51	0.77	0.32	0.66	0.67	0.69
Avail Cap(c_a), veh/h	145	1188	530	115	564	578	428	853	380	517	516	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	25.0	18.1	36.5	25.7	25.7	25.5	27.5	24.2	30.7	30.7	30.9
Incr Delay (d2), s/veh	22.0	9.7	0.1	10.4	12.5	12.3	4.2	6.8	2.2	2.6	2.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	10.0	0.5	1.3	9.2	9.4	3.8	6.2	2.0	3.3	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	34.8	18.2	46.9	38.3	38.0	29.7	34.2	26.4	33.3	33.5	34.1
LnGrp LOS	E	C	B	D	D	D	C	C	C	C	C	C
Approach Vol, veh/h		1185			980			997			557	
Approach Delay, s/veh		36.1			38.6			32.3			33.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		23.1	8.0	29.6		16.7	10.2	27.5
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		18.6	5.0	25.9		22.5	6.3	24.6
Max Q Clear Time (g_c+I1), s		15.4	4.4	23.7		10.0	6.4	20.8
Green Ext Time (p_c), s		1.6	0.0	1.4		2.2	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	35.4
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1458	97	78	765	102	93	580	110	98	394	74
Future Volume (veh/h)	99	1458	97	78	765	102	93	580	110	98	394	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	1585	105	85	832	111	101	630	120	107	428	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	1794	119	109	1595	212	337	1065	202	246	1070	198
Arrive On Green	0.08	0.37	0.37	0.06	0.35	0.35	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1781	4892	324	1781	4560	605	891	2979	566	712	2992	555
Grp Volume(v), veh/h	108	1103	587	85	620	323	101	375	375	107	253	255
Grp Sat Flow(s),veh/h/ln	1781	1702	1812	1781	1702	1761	891	1777	1768	712	1777	1770
Q Serve(g_s), s	3.7	19.1	19.1	3.0	9.1	9.2	6.0	10.8	10.9	9.1	6.7	6.8
Cycle Q Clear(g_c), s	3.7	19.1	19.1	3.0	9.1	9.2	12.8	10.8	10.9	19.9	6.7	6.8
Prop In Lane	1.00		0.18	1.00		0.34	1.00		0.32	1.00		0.31
Lane Grp Cap(c), veh/h	140	1248	664	109	1190	616	337	635	632	246	635	633
V/C Ratio(X)	0.77	0.88	0.88	0.78	0.52	0.52	0.30	0.59	0.59	0.44	0.40	0.40
Avail Cap(c_a), veh/h	266	1271	677	156	1190	616	337	635	632	246	635	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	18.7	18.7	29.1	16.3	16.3	20.0	16.5	16.5	24.6	15.2	15.2
Incr Delay (d2), s/veh	8.8	7.6	13.1	14.4	0.4	0.8	2.3	4.0	4.1	5.5	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	7.6	9.1	1.6	3.1	3.3	1.4	4.7	4.7	1.8	2.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	26.3	31.8	43.5	16.7	17.1	22.3	20.5	20.5	30.1	17.0	17.1
LnGrp LOS	D	C	C	D	B	B	C	C	C	C	B	B
Approach Vol, veh/h		1798			1028			851			615	
Approach Delay, s/veh		28.7			19.0			20.7			19.3	
Approach LOS		C			B			C			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.0	8.4	27.6		27.0	9.4	26.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.5	5.5	23.5		22.5	9.4	19.6				
Max Q Clear Time (g_c+I1), s		14.8	5.0	21.1		21.9	5.7	11.2				
Green Ext Time (p_c), s		3.2	0.0	2.0		0.2	0.1	3.7				

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	1380	101	94	767	109	124	564	86	164	520	111
Future Volume (veh/h)	177	1380	101	94	767	109	124	564	86	164	520	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	192	1500	110	102	834	118	135	613	93	178	565	121
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	1724	126	130	1353	190	168	858	383	214	951	424
Arrive On Green	0.13	0.36	0.36	0.07	0.30	0.30	0.09	0.24	0.24	0.12	0.27	0.27
Sat Flow, veh/h	1781	4854	356	1781	4523	636	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	192	1052	558	102	626	326	135	613	93	178	565	121
Grp Sat Flow(s),veh/h/ln	1781	1702	1806	1781	1702	1756	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.0	24.7	24.7	4.8	13.5	13.7	6.4	13.5	4.0	8.4	11.9	5.2
Cycle Q Clear(g_c), s	9.0	24.7	24.7	4.8	13.5	13.7	6.4	13.5	4.0	8.4	11.9	5.2
Prop In Lane	1.00		0.20	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	1209	641	130	1018	525	168	858	383	214	951	424
V/C Ratio(X)	0.84	0.87	0.87	0.79	0.62	0.62	0.80	0.71	0.24	0.83	0.59	0.29
Avail Cap(c_a), veh/h	285	1253	665	156	1018	525	210	858	383	260	951	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	25.8	25.8	39.0	25.8	25.8	38.0	29.8	26.2	36.8	27.3	24.9
Incr Delay (d2), s/veh	16.1	6.7	11.8	19.5	1.1	2.2	16.3	5.0	1.5	16.9	2.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.4	12.0	2.7	5.4	5.7	3.5	6.2	1.6	4.6	5.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	32.5	37.5	58.5	26.9	28.0	54.3	34.8	27.7	53.7	30.0	26.5
LnGrp LOS	D	C	D	E	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1802			1054			841			864	
Approach Delay, s/veh		36.2			30.3			37.1			34.4	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	25.2	10.7	34.9	12.6	27.4	15.5	30.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	20.5	7.5	31.5	10.1	22.9	13.7	25.3
Max Q Clear Time (g_c+I1), s	10.4	15.5	6.8	26.7	8.4	13.9	11.0	15.7
Green Ext Time (p_c), s	0.1	1.9	0.0	3.7	0.1	2.8	0.1	4.2

Intersection Summary	
HCM 6th Ctrl Delay	34.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	256	0	451	292	688	0	0	1007	132
Future Volume (veh/h)	0	0	0	256	0	451	292	688	0	0	1007	132
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				278	0	490	317	748	0	0	1095	143
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1170	0	520	425	1854	0	0	1480	193
Arrive On Green				0.33	0.00	0.33	0.12	0.52	0.00	0.00	0.32	0.32
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	4739	596
Grp Volume(v), veh/h				278	0	490	317	748	0	0	815	423
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1763
Q Serve(g_s), s				3.4	0.0	18.0	5.3	7.7	0.0	0.0	12.8	12.8
Cycle Q Clear(g_c), s				3.4	0.0	18.0	5.3	7.7	0.0	0.0	12.8	12.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.34
Lane Grp Cap(c), veh/h				1170	0	520	425	1854	0	0	1102	571
V/C Ratio(X)				0.24	0.00	0.94	0.75	0.40	0.00	0.00	0.74	0.74
Avail Cap(c_a), veh/h				1170	0	520	467	1854	0	0	1102	571
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				14.7	0.0	19.6	25.4	8.7	0.0	0.0	18.0	18.0
Incr Delay (d2), s/veh				0.1	0.0	25.6	5.9	0.7	0.0	0.0	4.5	8.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	9.1	2.4	2.6	0.0	0.0	5.2	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				14.8	0.0	45.2	31.3	9.3	0.0	0.0	22.5	26.5
LnGrp LOS				B	A	D	C	A	A	A	C	C
Approach Vol, veh/h					768			1065			1238	
Approach Delay, s/veh					34.2			15.9			23.9	
Approach LOS					C			B			C	

Timer - Assigned Phs	2	5	6	8
Phs Duration (G+Y+Rc), s	35.8	11.9	23.9	24.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.3	8.1	18.7	19.7
Max Q Clear Time (g_c+I1), s	9.7	7.3	14.8	20.0
Green Ext Time (p_c), s	5.4	0.1	2.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	0	546	0	0	0	0	861	320	380	881	0
Future Volume (veh/h)	185	0	546	0	0	0	0	861	320	380	881	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	134	0	665				0	936	348	413	958	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	462	0	821				0	1242	554	529	2069	0
Arrive On Green	0.26	0.00	0.26				0.00	0.35	0.35	0.15	0.58	0.00
Sat Flow, veh/h	1781	0	3170				0	3647	1585	3456	3647	0
Grp Volume(v), veh/h	134	0	665				0	936	348	413	958	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1728	1777	0
Q Serve(g_s), s	3.4	0.0	11.1				0.0	13.2	10.4	6.5	8.7	0.0
Cycle Q Clear(g_c), s	3.4	0.0	11.1				0.0	13.2	10.4	6.5	8.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	462	0	821				0	1242	554	529	2069	0
V/C Ratio(X)	0.29	0.00	0.81				0.00	0.75	0.63	0.78	0.46	0.00
Avail Cap(c_a), veh/h	566	0	1007				0	1242	554	579	2069	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.8	0.0	19.7				0.0	16.3	15.4	23.1	6.8	0.0
Incr Delay (d2), s/veh	0.3	0.0	4.2				0.0	4.3	5.3	6.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	4.0				0.0	5.4	4.1	2.9	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	23.8				0.0	20.5	20.7	29.3	7.5	0.0
LnGrp LOS	B	A	C				A	C	C	C	A	A
Approach Vol, veh/h		799						1284			1371	
Approach Delay, s/veh		22.7						20.6			14.1	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.2	24.3		19.2		37.5
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	9.5	19.0		18.0		33.0
Max Q Clear Time (g_c+I1), s	8.5	15.2		13.1		10.7
Green Ext Time (p_c), s	0.2	2.5		1.5		7.3

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	9	26	118	16	157	26	1222	268	79	739	13
Future Volume (veh/h)	10	9	26	118	16	157	26	1222	268	79	739	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	10	28	128	17	171	28	1328	291	86	803	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	72	122	260	26	245	515	2064	445	239	2537	44
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	117	423	720	998	154	1442	669	2908	627	312	3574	62
Grp Volume(v), veh/h	49	0	0	145	0	171	28	803	816	86	399	418
Grp Sat Flow(s),veh/h/ln	1260	0	0	1152	0	1442	669	1777	1758	312	1777	1859
Q Serve(g_s), s	0.1	0.0	0.0	1.3	0.0	8.3	1.2	17.9	18.8	15.4	6.3	6.3
Cycle Q Clear(g_c), s	8.4	0.0	0.0	9.7	0.0	8.3	7.5	17.9	18.8	34.2	6.3	6.3
Prop In Lane	0.22		0.57	0.88		1.00	1.00		0.36	1.00		0.03
Lane Grp Cap(c), veh/h	273	0	0	286	0	245	515	1261	1248	239	1261	1320
V/C Ratio(X)	0.18	0.00	0.00	0.51	0.00	0.70	0.05	0.64	0.65	0.36	0.32	0.32
Avail Cap(c_a), veh/h	381	0	0	387	0	348	515	1261	1248	239	1261	1320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	0.0	29.9	0.0	29.2	5.5	5.7	5.9	15.1	4.1	4.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.4	0.0	3.6	0.2	2.5	2.7	4.2	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	2.5	0.0	3.0	0.2	5.5	5.7	1.2	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	0.0	31.3	0.0	32.8	5.7	8.2	8.5	19.3	4.7	4.7
LnGrp LOS	C	A	A	C	A	C	A	A	A	B	A	A
Approach Vol, veh/h		49			316			1647			903	
Approach Delay, s/veh		26.9			32.1			8.3			6.1	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	57.5	17.2	57.5	17.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	53.0	18.0	53.0	18.0
Max Q Clear Time (g_c+I1), s	20.8	10.4	36.2	11.7
Green Ext Time (p_c), s	16.7	0.1	6.3	1.0

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (veh/h)	265	267	0	1110	230	2	893	242	0	0
Future Volume (veh/h)	265	267	0	1110	230	2	893	242	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	288	290	0	1207	250	2	971	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	0	2	2	2	2	2		
Cap, veh/h	465	413	0	2089	433	100	1716			
Arrive On Green	0.26	0.26	0.00	0.49	0.49	0.49	0.49	0.00		
Sat Flow, veh/h	1781	1585	0	4407	878	1	3481	1585		
Grp Volume(v), veh/h	288	290	0	969	488	521	452	0		
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1702	1712	1866	1617	1585		
Q Serve(g_s), s	5.2	6.0	0.0	7.4	7.4	0.0	7.2	0.0		
Cycle Q Clear(g_c), s	5.2	6.0	0.0	7.4	7.4	7.2	7.2	0.0		
Prop In Lane	1.00	1.00	0.00		0.51	0.00		1.00		
Lane Grp Cap(c), veh/h	465	413	0	1677	844	1018	797			
V/C Ratio(X)	0.62	0.70	0.00	0.58	0.58	0.51	0.57			
Avail Cap(c_a), veh/h	878	781	0	1677	844	1018	797			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	11.9	12.2	0.0	6.6	6.6	6.5	6.5	0.0		
Incr Delay (d2), s/veh	1.4	2.2	0.0	1.5	2.9	1.8	2.9	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	2.0	0.0	1.9	2.2	2.2	2.1	0.0		
Unsig. Movement Delay, s/veh										
LnGrp Delay(d),s/veh	13.3	14.4	0.0	8.0	9.4	8.4	9.4	0.0		
LnGrp LOS	B	B	A	A	A	A	A			
Approach Vol, veh/h	578			1457			973	A		
Approach Delay, s/veh	13.8			8.5			8.9			
Approach LOS	B			A			A			

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		22.5		14.0		22.5
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.0		18.0		18.0
Max Q Clear Time (g_c+I1), s		9.4		8.0		9.2
Green Ext Time (p_c), s		5.8		1.5		4.1

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1393	94	113	791	72	68	603	176	93	543	79
Future Volume (veh/h)	77	1393	94	113	791	72	68	603	176	93	543	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	1514	102	123	860	78	74	655	191	101	590	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	1660	112	157	1741	157	268	1233	550	250	1080	157
Arrive On Green	0.06	0.34	0.34	0.09	0.37	0.37	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	4886	329	1781	4766	431	763	3554	1585	651	3113	453
Grp Volume(v), veh/h	84	1055	561	123	613	325	74	655	191	101	336	340
Grp Sat Flow(s),veh/h/ln	1781	1702	1811	1781	1702	1793	763	1777	1585	651	1777	1789
Q Serve(g_s), s	2.8	17.8	17.8	4.1	8.4	8.4	5.2	8.9	5.4	8.8	9.1	9.2
Cycle Q Clear(g_c), s	2.8	17.8	17.8	4.1	8.4	8.4	14.4	8.9	5.4	17.7	9.1	9.2
Prop In Lane	1.00		0.18	1.00		0.24	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	112	1157	615	157	1243	655	268	1233	550	250	617	621
V/C Ratio(X)	0.75	0.91	0.91	0.78	0.49	0.50	0.28	0.53	0.35	0.40	0.55	0.55
Avail Cap(c_a), veh/h	208	1163	619	193	1243	655	268	1233	550	250	617	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	18.9	18.9	26.8	14.7	14.8	21.6	15.7	14.5	22.8	15.8	15.8
Incr Delay (d2), s/veh	9.7	10.8	17.9	15.4	0.3	0.6	2.5	1.6	1.7	4.8	3.4	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	7.8	9.5	2.3	2.8	3.1	1.1	3.5	1.9	1.6	3.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	29.7	36.8	42.2	15.1	15.3	24.1	17.3	16.3	27.6	19.2	19.2
LnGrp LOS	D	C	D	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1700			1061			920			777	
Approach Delay, s/veh		32.4			18.3			17.7			20.3	
Approach LOS		C			B			B			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.3	9.8	24.9		25.3	8.3	26.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5	6.5	20.5		19.5	7.0	20.0				
Max Q Clear Time (g_c+I1), s		16.4	6.1	19.8		19.7	4.8	10.4				
Green Ext Time (p_c), s		1.6	0.0	0.6		0.0	0.0	4.1				

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	1499	101	146	807	129	76	444	276	87	500	114
Future Volume (veh/h)	87	1499	101	146	807	129	76	444	276	87	500	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	1629	110	159	877	140	83	483	300	95	543	124
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	1769	119	198	1796	285	261	1128	503	257	1128	503
Arrive On Green	0.07	0.36	0.36	0.11	0.40	0.40	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	4885	330	1781	4442	706	769	3554	1585	691	3554	1585
Grp Volume(v), veh/h	95	1135	604	159	671	346	83	483	300	95	543	124
Grp Sat Flow(s),veh/h/ln	1781	1702	1811	1781	1702	1743	769	1777	1585	691	1777	1585
Q Serve(g_s), s	3.4	20.6	20.6	5.6	9.4	9.5	6.3	6.9	10.3	8.1	7.9	3.7
Cycle Q Clear(g_c), s	3.4	20.6	20.6	5.6	9.4	9.5	14.2	6.9	10.3	15.1	7.9	3.7
Prop In Lane	1.00		0.18	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	1233	656	198	1377	705	261	1128	503	257	1128	503
V/C Ratio(X)	0.77	0.92	0.92	0.80	0.49	0.49	0.32	0.43	0.60	0.37	0.48	0.25
Avail Cap(c_a), veh/h	251	1239	659	207	1377	705	261	1128	503	257	1128	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	19.7	19.7	28.0	14.3	14.3	23.5	17.4	18.5	23.4	17.8	16.3
Incr Delay (d2), s/veh	9.8	11.2	18.4	19.3	0.3	0.5	3.2	1.2	5.1	4.1	1.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	9.0	10.9	3.3	3.2	3.4	1.3	2.8	4.1	1.5	3.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	30.9	38.1	47.3	14.5	14.8	26.7	18.6	23.7	27.4	19.2	17.5
LnGrp LOS	D	C	D	D	B	B	C	B	C	C	B	B
Approach Vol, veh/h		1834			1176			866			762	
Approach Delay, s/veh		33.7			19.0			21.1			20.0	
Approach LOS		C			B			C			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	11.7	27.9		25.0	9.0	30.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	7.5	23.5		20.5	9.1	21.9				
Max Q Clear Time (g_c+I1), s		16.2	7.6	22.6		17.1	5.4	11.5				
Green Ext Time (p_c), s		1.9	0.0	0.8		1.5	0.1	4.7				

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	1496	87	72	948	164	60	409	32	193	585	213
Future Volume (veh/h)	209	1496	87	72	948	164	60	409	32	193	585	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	1626	95	78	1030	178	65	445	35	210	636	232
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1827	107	100	1211	209	268	868	68	374	1047	467
Arrive On Green	0.15	0.37	0.37	0.06	0.28	0.28	0.05	0.26	0.26	0.08	0.29	0.29
Sat Flow, veh/h	1781	4934	288	1781	4382	756	1781	3338	262	1781	3554	1585
Grp Volume(v), veh/h	227	1121	600	78	800	408	65	236	244	210	636	232
Grp Sat Flow(s),veh/h/ln	1781	1702	1818	1781	1702	1734	1781	1777	1823	1781	1777	1585
Q Serve(g_s), s	9.7	24.2	24.2	3.4	17.4	17.4	2.0	8.9	8.9	6.5	12.0	9.4
Cycle Q Clear(g_c), s	9.7	24.2	24.2	3.4	17.4	17.4	2.0	8.9	8.9	6.5	12.0	9.4
Prop In Lane	1.00		0.16	1.00		0.44	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	267	1260	673	100	940	479	268	462	474	374	1047	467
V/C Ratio(X)	0.85	0.89	0.89	0.78	0.85	0.85	0.24	0.51	0.51	0.56	0.61	0.50
Avail Cap(c_a), veh/h	308	1286	687	130	946	482	296	462	474	374	1047	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	23.1	23.1	36.4	26.7	26.8	20.0	24.7	24.7	20.0	23.7	22.8
Incr Delay (d2), s/veh	17.6	8.0	13.7	19.7	7.4	13.7	0.5	4.0	4.0	1.9	2.6	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	10.2	12.0	2.0	7.6	8.5	0.9	4.1	4.2	2.9	5.3	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	31.0	36.8	56.1	34.2	40.4	20.5	28.7	28.6	21.9	26.3	26.5
LnGrp LOS	D	C	D	E	C	D	C	C	C	C	C	C
Approach Vol, veh/h		1948			1286			545			1078	
Approach Delay, s/veh		35.0			37.5			27.7			25.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	24.8	8.9	33.4	8.3	27.5	16.2	26.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	20.3	5.7	29.5	5.0	21.8	13.5	21.7
Max Q Clear Time (g_c+I1), s	8.5	10.9	5.4	26.2	4.0	14.0	11.7	19.4
Green Ext Time (p_c), s	0.0	2.0	0.0	2.7	0.0	3.2	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	1265	18	289	1200	43	142	716	295	172	826	199
Future Volume (veh/h)	215	1265	18	289	1200	43	142	716	295	172	826	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	1375	20	314	1304	47	154	778	321	187	898	216
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	1415	21	332	1597	58	298	805	332	215	1037	463
Arrive On Green	0.14	0.27	0.27	0.19	0.32	0.32	0.12	0.33	0.33	0.09	0.29	0.29
Sat Flow, veh/h	1781	5185	75	1781	5059	182	1781	2454	1011	1781	3554	1585
Grp Volume(v), veh/h	234	903	492	314	877	474	154	563	536	187	898	216
Grp Sat Flow(s),veh/h/ln	1781	1702	1857	1781	1702	1838	1781	1777	1688	1781	1777	1585
Q Serve(g_s), s	18.7	38.0	38.0	25.2	34.4	34.4	7.8	45.1	45.2	10.5	34.7	16.2
Cycle Q Clear(g_c), s	18.7	38.0	38.0	25.2	34.4	34.4	7.8	45.1	45.2	10.5	34.7	16.2
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	256	929	507	332	1075	580	298	583	554	215	1037	463
V/C Ratio(X)	0.91	0.97	0.97	0.95	0.82	0.82	0.52	0.97	0.97	0.87	0.87	0.47
Avail Cap(c_a), veh/h	265	929	507	332	1075	580	298	583	554	279	1166	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.1	52.1	52.1	58.1	45.7	45.7	31.8	47.8	47.9	37.2	48.6	42.0
Incr Delay (d2), s/veh	33.1	22.8	32.7	35.2	5.0	8.9	6.3	29.7	31.0	20.2	6.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	18.8	21.9	14.4	15.0	16.8	3.8	24.3	23.3	5.7	16.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.2	74.9	84.8	93.3	50.6	54.5	38.1	77.5	78.8	57.4	55.0	42.8
LnGrp LOS	F	E	F	F	D	D	D	E	E	E	E	D
Approach Vol, veh/h		1629			1665			1253			1301	
Approach Delay, s/veh		80.6			59.8			73.2			53.3	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	52.0	31.5	44.0	22.5	46.7	25.3	50.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	47.5	27.0	39.5	18.0	47.5	21.5	45.0
Max Q Clear Time (g_c+I1), s	12.5	47.2	27.2	40.0	9.8	36.7	20.7	36.4
Green Ext Time (p_c), s	0.2	0.2	0.0	0.0	0.2	4.9	0.1	5.2

Intersection Summary	
HCM 6th Ctrl Delay	67.0
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	1103	147	231	938	300	283	1088	264	248	697	180
Future Volume (veh/h)	221	1103	147	231	938	300	283	1088	264	248	697	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	240	1199	160	251	1020	326	308	1183	287	270	758	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	1196	160	263	992	442	325	1189	288	267	915	408
Arrive On Green	0.13	0.26	0.26	0.15	0.28	0.28	0.18	0.29	0.29	0.15	0.26	0.26
Sat Flow, veh/h	1781	4557	608	1781	3554	1585	1781	4101	995	1781	3554	1585
Grp Volume(v), veh/h	240	896	463	251	1020	326	308	982	488	270	758	196
Grp Sat Flow(s),veh/h/ln	1781	1702	1761	1781	1777	1585	1781	1702	1691	1781	1777	1585
Q Serve(g_s), s	15.7	31.5	31.5	16.8	33.5	22.4	20.5	34.5	34.5	18.0	24.2	12.6
Cycle Q Clear(g_c), s	15.7	31.5	31.5	16.8	33.5	22.4	20.5	34.5	34.5	18.0	24.2	12.6
Prop In Lane	1.00		0.35	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	233	894	462	263	992	442	325	987	490	267	915	408
V/C Ratio(X)	1.03	1.00	1.00	0.96	1.03	0.74	0.95	0.99	0.99	1.01	0.83	0.48
Avail Cap(c_a), veh/h	233	894	462	263	992	442	325	987	490	267	915	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	44.3	44.3	50.8	43.2	39.2	48.5	42.5	42.5	51.0	42.0	37.7
Incr Delay (d2), s/veh	66.9	30.7	42.5	43.2	36.0	6.3	36.2	27.4	39.4	57.8	8.5	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	16.7	18.8	10.5	19.2	9.3	12.2	17.8	19.3	12.1	11.4	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.1	74.9	86.7	94.0	79.2	45.6	84.7	69.9	81.9	108.8	50.6	41.8
LnGrp LOS	F	F	F	F	F	D	F	E	F	F	D	D
Approach Vol, veh/h		1599			1597			1778			1224	
Approach Delay, s/veh		85.0			74.7			75.8			62.0	
Approach LOS		F			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	39.3	22.2	36.0	26.4	35.4	20.2	38.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	34.8	17.7	31.5	21.9	30.9	15.7	33.5
Max Q Clear Time (g_c+I1), s	20.0	36.5	18.8	33.5	22.5	26.2	17.7	35.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	75.1
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	1191	287	221	706	71	327	1352	374	102	838	107
Future Volume (veh/h)	278	1191	287	221	706	71	327	1352	374	102	838	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	302	1295	312	240	767	77	355	1470	407	111	911	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	1396	433	299	1172	117	443	1654	514	135	1585	199
Arrive On Green	0.11	0.27	0.27	0.09	0.25	0.25	0.13	0.32	0.32	0.08	0.27	0.27
Sat Flow, veh/h	3456	5106	1585	3456	4719	471	3456	5106	1585	1781	5831	733
Grp Volume(v), veh/h	302	1295	312	240	552	292	355	1470	407	111	752	275
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1786	1728	1702	1585	1781	1609	1738
Q Serve(g_s), s	6.4	18.5	13.4	5.1	10.9	11.0	7.5	20.5	17.5	4.6	10.1	10.3
Cycle Q Clear(g_c), s	6.4	18.5	13.4	5.1	10.9	11.0	7.5	20.5	17.5	4.6	10.1	10.3
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	386	1396	433	299	845	443	443	1654	514	135	1312	473
V/C Ratio(X)	0.78	0.93	0.72	0.80	0.65	0.66	0.80	0.89	0.79	0.82	0.57	0.58
Avail Cap(c_a), veh/h	392	1396	433	299	845	443	479	1654	514	135	1312	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	26.5	24.7	33.6	25.3	25.3	31.8	24.1	23.1	34.1	23.6	23.6
Incr Delay (d2), s/veh	9.8	11.0	5.7	14.4	1.8	3.6	8.9	7.5	11.9	31.3	1.8	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	8.2	5.3	2.6	4.3	4.7	3.4	8.4	7.6	3.0	3.7	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	37.5	30.4	48.0	27.1	28.9	40.6	31.6	34.9	65.5	25.4	28.8
LnGrp LOS	D	D	C	D	C	C	D	C	C	E	C	C
Approach Vol, veh/h		1909			1084			2232			1138	
Approach Delay, s/veh		37.1			32.2			33.6			30.1	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	28.8	11.0	25.0	14.1	24.9	12.9	23.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.7	24.3	6.5	20.5	10.4	19.6	8.5	18.5
Max Q Clear Time (g_c+I1), s	6.6	22.5	7.1	20.5	9.5	12.3	8.4	13.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.0	0.1	3.6	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	672	1277	182	246	529	271	47	1480	204	258	1586	406
Future Volume (veh/h)	672	1277	182	246	529	271	47	1480	204	258	1586	406
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	730	1388	198	267	575	295	51	1609	222	280	1724	441
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	887	1159	165	415	613	190	783	1458	359	956	1413	772
Arrive On Green	0.26	0.26	0.26	0.12	0.12	0.12	0.23	0.23	0.23	0.28	0.28	0.28
Sat Flow, veh/h	3456	4515	644	3456	5106	1585	3456	6434	1585	3456	5106	2790
Grp Volume(v), veh/h	730	1046	540	267	575	295	51	1609	222	280	1724	441
Grp Sat Flow(s),veh/h/ln	1728	1702	1754	1728	1702	1585	1728	1609	1585	1728	1702	1395
Q Serve(g_s), s	29.9	38.5	38.5	11.1	16.8	18.0	1.7	34.0	18.9	9.6	41.5	20.4
Cycle Q Clear(g_c), s	29.9	38.5	38.5	11.1	16.8	18.0	1.7	34.0	18.9	9.6	41.5	20.4
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	887	874	450	415	613	190	783	1458	359	956	1413	772
V/C Ratio(X)	0.82	1.20	1.20	0.64	0.94	1.55	0.07	1.10	0.62	0.29	1.22	0.57
Avail Cap(c_a), veh/h	887	874	450	415	613	190	783	1458	359	956	1413	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	55.8	55.8	62.9	65.5	66.0	45.5	58.0	52.2	42.7	54.3	46.6
Incr Delay (d2), s/veh	6.3	100.1	109.0	3.4	22.4	272.2	0.2	57.2	7.8	0.8	105.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	28.4	30.4	5.0	8.5	21.6	0.8	19.3	8.2	4.2	31.1	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	155.8	164.7	66.3	87.8	338.2	45.7	115.2	59.9	43.5	160.0	49.7
LnGrp LOS	E	F	F	E	F	F	D	F	E	D	F	D
Approach Vol, veh/h		2316			1137			1882			2445	
Approach Delay, s/veh		127.3			147.7			106.8			126.8	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		43.0		46.0		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		34.0		38.5		41.5		18.0				
Max Q Clear Time (g_c+I1), s		36.0		40.5		43.5		20.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	125.2
HCM 6th LOS	F

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	106	564	44	366	510	66	108	1071	376	83	681	140
Future Volume (veh/h)	106	564	44	366	510	66	108	1071	376	83	681	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	613	48	398	554	72	117	1164	409	90	740	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	770	343	406	1289	575	182	1098	386	109	889	183
Arrive On Green	0.08	0.22	0.22	0.23	0.36	0.36	0.05	0.29	0.29	0.06	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3729	1309	1781	2936	603
Grp Volume(v), veh/h	115	613	48	398	554	72	117	1062	511	90	448	444
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1635	1781	1777	1762
Q Serve(g_s), s	5.7	14.7	2.2	20.0	10.6	2.7	3.0	26.5	26.5	4.5	21.1	21.1
Cycle Q Clear(g_c), s	5.7	14.7	2.2	20.0	10.6	2.7	3.0	26.5	26.5	4.5	21.1	21.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		0.34
Lane Grp Cap(c), veh/h	146	770	343	406	1289	575	182	1002	481	109	538	534
V/C Ratio(X)	0.79	0.80	0.14	0.98	0.43	0.13	0.64	1.06	1.06	0.83	0.83	0.83
Avail Cap(c_a), veh/h	245	770	343	406	1289	575	200	1002	481	109	538	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	33.4	28.5	34.6	21.7	19.1	41.8	31.7	31.8	41.8	29.2	29.2
Incr Delay (d2), s/veh	9.1	8.4	0.8	39.5	1.0	0.4	6.1	45.7	58.1	38.5	10.7	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.0	0.9	12.6	4.3	1.1	1.4	16.8	17.8	3.1	10.3	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	41.7	29.3	74.1	22.7	19.6	47.9	77.5	89.8	80.3	39.9	40.0
LnGrp LOS	D	D	C	E	C	B	D	F	F	F	D	D
Approach Vol, veh/h		776			1024			1690			982	
Approach Delay, s/veh		42.1			42.4			79.2			43.6	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	37.1	10.0	31.0	25.0	24.0	9.2	31.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.4	27.6	5.5	26.5	20.5	19.5	5.2	26.8
Max Q Clear Time (g_c+I1), s	7.7	12.6	6.5	28.5	22.0	16.7	5.0	23.1
Green Ext Time (p_c), s	0.1	3.2	0.0	0.0	0.0	1.1	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	56.5
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	190	520	51	225	87	400	886	66	55	1074	27
Future Volume (veh/h)	58	190	520	51	225	87	400	886	66	55	1074	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	207	565	55	245	95	435	963	72	60	1167	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	413	330	116	451	330	469	2120	946	77	1335	33
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.26	0.60	0.60	0.04	0.38	0.38
Sat Flow, veh/h	403	1987	1585	272	2165	1585	1781	3554	1585	1781	3543	88
Grp Volume(v), veh/h	101	169	565	119	181	95	435	963	72	60	585	611
Grp Sat Flow(s),veh/h/ln	773	1617	1585	819	1617	1585	1781	1777	1585	1781	1777	1855
Q Serve(g_s), s	5.0	8.2	18.5	5.4	8.9	4.5	21.2	13.3	1.7	3.0	27.2	27.2
Cycle Q Clear(g_c), s	13.9	8.2	18.5	13.6	8.9	4.5	21.2	13.3	1.7	3.0	27.2	27.2
Prop In Lane	0.62		1.00	0.46		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	227	337	330	230	337	330	469	2120	946	77	670	699
V/C Ratio(X)	0.45	0.50	1.71	0.52	0.54	0.29	0.93	0.45	0.08	0.77	0.87	0.87
Avail Cap(c_a), veh/h	227	337	330	230	337	330	491	2120	946	172	670	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	31.1	35.2	33.1	31.4	29.6	31.9	9.9	7.6	42.1	25.7	25.7
Incr Delay (d2), s/veh	1.4	1.2	333.3	2.0	1.7	0.5	23.6	0.7	0.2	15.1	14.8	14.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.2	37.5	2.5	3.6	1.7	11.6	4.6	0.5	1.6	13.3	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	32.3	368.5	35.1	33.1	30.1	55.5	10.6	7.7	57.1	40.5	40.0
LnGrp LOS	D	C	F	D	C	C	E	B	A	E	D	D
Approach Vol, veh/h		835			395			1470			1256	
Approach Delay, s/veh		260.3			33.0			23.8			41.1	
Approach LOS		F			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	57.5		23.0	27.9	38.0		23.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	8.6	49.4		18.5	24.5	33.5		18.5
Max Q Clear Time (g_c+I1), s	5.0	15.3		20.5	23.2	29.2		15.6
Green Ext Time (p_c), s	0.0	7.9		0.0	0.2	2.7		0.7

Intersection Summary	
HCM 6th Ctrl Delay	80.1
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	1431	122	0	1504	422	550	941	10	211	926	10
Future Volume (veh/h)	0	1431	122	0	1504	422	550	941	10	211	926	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1555	133	0	1635	459	598	1023	11	229	1007	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	2209	189	0	1639	731	611	1291	14	251	1105	12
Arrive On Green	0.00	0.46	0.46	0.00	0.46	0.46	0.18	0.25	0.25	0.14	0.21	0.21
Sat Flow, veh/h	0	4960	410	0	3647	1585	3456	5208	56	1781	5207	57
Grp Volume(v), veh/h	0	1104	584	0	1635	459	598	669	365	229	658	360
Grp Sat Flow(s),veh/h/ln	0	1702	1797	0	1777	1585	1728	1702	1860	1781	1702	1860
Q Serve(g_s), s	0.0	23.3	23.3	0.0	41.3	19.8	15.5	16.5	16.6	11.4	17.0	17.0
Cycle Q Clear(g_c), s	0.0	23.3	23.3	0.0	41.3	19.8	15.5	16.5	16.6	11.4	17.0	17.0
Prop In Lane	0.00		0.23	0.00		1.00	1.00		0.03	1.00		0.03
Lane Grp Cap(c), veh/h	0	1570	828	0	1639	731	611	843	461	251	722	395
V/C Ratio(X)	0.00	0.70	0.70	0.00	1.00	0.63	0.98	0.79	0.79	0.91	0.91	0.91
Avail Cap(c_a), veh/h	0	1570	828	0	1639	731	611	843	461	251	722	395
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	19.3	19.4	0.0	24.2	18.4	36.9	31.7	31.7	38.1	34.6	34.6
Incr Delay (d2), s/veh	0.0	1.4	2.7	0.0	21.7	1.7	31.2	7.5	13.1	34.1	17.7	27.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.6	9.4	0.0	20.3	18.0	8.9	7.3	8.7	7.1	8.4	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.8	22.1	0.0	45.9	20.1	68.0	39.2	44.8	72.2	52.3	62.3
LnGrp LOS	A	C	C	A	D	C	E	D	D	E	D	E
Approach Vol, veh/h		1688			2094			1632			1247	
Approach Delay, s/veh		21.2			40.2			51.0			58.9	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.4	23.6		46.0	17.2	26.8		46.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.9	19.1		41.5	12.7	22.3		41.5
Max Q Clear Time (g_c+I1), s	17.5	19.0		25.3	13.4	18.6		43.3
Green Ext Time (p_c), s	0.0	0.1		10.0	0.0	2.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	58	352	108	400	313	6	85	1005	56	103	1012	296
Future Volume (veh/h)	58	352	108	400	313	6	85	1005	56	103	1012	296
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	383	117	435	340	0	92	1092	61	112	1100	322
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	612	772	344	558	1138		181	2108	118	209	2175	675
Arrive On Green	0.20	0.22	0.22	0.21	0.22	0.00	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1781	3554	1585	1781	5106	1585	377	4948	276	487	5106	1585
Grp Volume(v), veh/h	63	383	117	435	340	0	92	751	402	112	1100	322
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1702	1585	377	1702	1821	487	1702	1585
Q Serve(g_s), s	1.9	8.5	5.6	16.7	5.0	0.0	21.2	14.6	14.6	19.7	14.1	13.1
Cycle Q Clear(g_c), s	1.9	8.5	5.6	16.7	5.0	0.0	35.3	14.6	14.6	34.3	14.1	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	612	772	344	558	1138		181	1450	776	209	2175	675
V/C Ratio(X)	0.10	0.50	0.34	0.78	0.30		0.51	0.52	0.52	0.54	0.51	0.48
Avail Cap(c_a), veh/h	612	772	344	558	1138		183	1461	781	210	2191	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	30.8	29.7	20.5	29.0	0.0	31.8	19.0	19.0	31.6	18.8	18.5
Incr Delay (d2), s/veh	0.3	2.3	2.7	7.0	0.1	0.0	2.2	0.3	0.6	2.6	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.8	2.4	7.7	2.0	0.0	2.0	5.6	6.0	2.4	5.4	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	33.1	32.3	27.5	29.2	0.0	34.0	19.3	19.6	34.3	19.0	19.1
LnGrp LOS	B	C	C	C	C		C	B	B	C	B	B
Approach Vol, veh/h		563			775	A		1245			1534	
Approach Delay, s/veh		31.0			28.2			20.5			20.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.0	24.0		42.7	22.5	24.5		42.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.5	19.5		38.5	18.0	20.0		38.5
Max Q Clear Time (g_c+I1), s	18.7	10.5		37.3	3.9	7.0		36.3
Green Ext Time (p_c), s	0.0	1.9		0.9	0.1	1.8		1.7

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	308	1129	307	343	1232	347	276	1022	428	433	958	316
Future Volume (veh/h)	308	1129	307	343	1232	347	276	1022	428	433	958	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	335	1227	334	373	1339	377	300	1111	465	471	1041	343
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	393	1521	430	427	1452	451	354	1301	404	519	1150	379
Arrive On Green	0.11	0.27	0.27	0.12	0.28	0.28	0.10	0.25	0.25	0.15	0.30	0.30
Sat Flow, veh/h	3563	5611	1585	3456	5106	1585	3456	5106	1585	3456	3798	1251
Grp Volume(v), veh/h	335	1227	334	373	1339	377	300	1111	465	471	933	451
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1702	1585	1728	1702	1585	1728	1702	1645
Q Serve(g_s), s	8.3	18.3	17.5	9.5	22.9	20.1	7.7	18.6	22.9	12.0	23.7	23.7
Cycle Q Clear(g_c), s	8.3	18.3	17.5	9.5	22.9	20.1	7.7	18.6	22.9	12.0	23.7	23.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	393	1521	430	427	1452	451	354	1301	404	519	1031	498
V/C Ratio(X)	0.85	0.81	0.78	0.87	0.92	0.84	0.85	0.85	1.15	0.91	0.91	0.91
Avail Cap(c_a), veh/h	393	1530	432	427	1461	453	354	1301	404	519	1031	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	30.6	30.2	38.7	31.2	30.2	39.6	31.9	33.5	37.6	30.1	30.1
Incr Delay (d2), s/veh	16.5	3.3	8.7	17.8	10.0	12.8	17.2	7.3	92.8	19.7	12.8	22.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	8.0	7.1	4.8	9.8	8.6	4.0	8.1	18.4	6.3	10.9	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	33.8	38.9	56.5	41.1	43.0	56.9	39.1	126.3	57.2	42.9	52.7
LnGrp LOS	E	C	D	E	D	D	E	D	F	E	D	D
Approach Vol, veh/h		1896			2089			1876			1855	
Approach Delay, s/veh		38.6			44.2			63.6			48.9	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	31.7	15.6	28.8	18.0	27.4	14.4	30.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.2	27.2	11.1	24.5	13.5	22.9	9.9	25.7
Max Q Clear Time (g_c+I1), s	9.7	25.7	11.5	20.3	14.0	24.9	10.3	24.9
Green Ext Time (p_c), s	0.0	1.2	0.0	3.0	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	48.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1605	160	0	1015	229	0	0	461	869	235	607
Future Volume (vph)	0	1605	160	0	1015	229	0	0	461	869	235	607
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor		0.86			0.91	1.00			1.00	0.97	0.91	0.91
Frt		0.99			1.00	0.85			0.86	1.00	0.92	0.85
Flt Protected		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (prot)		6321			5085	1583			1611	3433	3103	1441
Flt Permitted		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (perm)		6321			5085	1583			1611	3433	3103	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1745	174	0	1103	249	0	0	501	945	255	660
RTOR Reduction (vph)	0	18	0	0	0	175	0	0	53	0	2	7
Lane Group Flow (vph)	0	1901	0	0	1103	74	0	0	448	945	583	323
Turn Type		NA			NA	Perm			Perm	Prot	NA	Perm
Protected Phases		4			8					1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)		26.6			26.6	26.6			25.0	24.9	54.4	54.4
Effective Green, g (s)		26.6			26.6	26.6			25.0	24.9	54.4	54.4
Actuated g/C Ratio		0.30			0.30	0.30			0.28	0.28	0.60	0.60
Clearance Time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1868			1502	467			447	949	1875	871
v/s Ratio Prot		c0.30			0.22					c0.28	0.19	
v/s Ratio Perm						0.05			c0.28			0.22
v/c Ratio		1.02			0.73	0.16			1.00	1.00	0.31	0.37
Uniform Delay, d1		31.7			28.5	23.4			32.5	32.5	8.7	9.1
Progression Factor		1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2		25.3			1.9	0.2			43.3	28.0	0.4	1.2
Delay (s)		57.0			30.4	23.6			75.8	60.5	9.1	10.3
Level of Service		E			C	C			E	E	A	B
Approach Delay (s)		57.0			29.2			75.8			35.4	
Approach LOS		E			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	44.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2566	0	0	1020	664	299	0	478	0	0	0
Future Volume (vph)	0	2566	0	0	1020	664	299	0	478	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5	4.5		4.5			
Lane Util. Factor		0.86			0.95	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		6408			3539	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		6408			3539	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2789	0	0	1109	722	325	0	520	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	331	0	0	19	0	0	0
Lane Group Flow (vph)	0	2789	0	0	1109	391	325	0	501	0	0	0
Turn Type		NA			NA	Perm	Perm		Perm			
Protected Phases		4			8							
Permitted Phases						8	2		2			
Actuated Green, G (s)		32.5			32.5	32.5	18.5		18.5			
Effective Green, g (s)		32.5			32.5	32.5	18.5		18.5			
Actuated g/C Ratio		0.54			0.54	0.54	0.31		0.31			
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		3471			1916	857	1058		859			
v/s Ratio Prot		c0.44			0.31							
v/s Ratio Perm						0.25	0.09		c0.18			
v/c Ratio		0.80			0.58	0.46	0.31		0.58			
Uniform Delay, d1		11.2			9.2	8.4	15.9		17.5			
Progression Factor		1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2		1.4			0.4	0.4	0.8		2.9			
Delay (s)		12.6			9.6	8.8	16.6		20.4			
Level of Service		B			A	A	B		C			
Approach Delay (s)		12.6			9.3			18.9			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	31	180	24	985	64	959
v/c Ratio	0.11	0.33	0.07	0.41	0.18	0.40
Control Delay	10.2	9.7	4.5	4.7	5.8	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	9.7	4.5	4.7	5.8	4.8
Queue Length 50th (ft)	3	8	2	45	5	45
Queue Length 95th (ft)	17	27	9	87	21	87
Internal Link Dist (ft)	55	291		153		271
Turn Bay Length (ft)			40		100	
Base Capacity (vph)	713	1264	361	2376	348	2407
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.14	0.07	0.41	0.18	0.40

Intersection Summary

Distance to freeway off-ramp is is approx. 160 ft.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	316	28	1619	86	817
v/c Ratio	0.18	0.63	0.06	0.65	0.58	0.32
Control Delay	16.4	27.5	4.5	7.5	27.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	27.5	4.5	7.5	27.9	4.7
Queue Length 50th (ft)	8	54	3	158	15	58
Queue Length 95th (ft)	35	93	13	294	#106	109
Internal Link Dist (ft)	55	291		153		271
Turn Bay Length (ft)			40		100	
Base Capacity (vph)	388	703	438	2480	148	2523
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.45	0.06	0.65	0.58	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Distance to freeway off-ramp is is approx. 160 ft.

Lane Group	EBL	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	154	94	1544	744	252	1588	457	1269
v/c Ratio	0.08	0.05	1.61	1.73	0.88	1.06	1.57	1.02dr
Control Delay	11.0	20.0	300.6	369.2	75.3	76.4	305.1	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	20.0	300.6	369.2	75.3	76.4	305.1	11.7
Queue Length 50th (ft)	22	13	~1325	~363	83	~319	~213	66
Queue Length 95th (ft)	37	25	#1590	#479	#154	#396	#312	121
Internal Link Dist (ft)		430				303		392
Turn Bay Length (ft)	175		300	150	175		140	
Base Capacity (vph)	1870	1906	958	429	288	1504	291	1750
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	1.61	1.73	0.88	1.06	1.57	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBL	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	154	94	1544	744	252	1588	457	1269
v/c Ratio	0.08	0.05	1.61	1.73	0.88	1.06	1.57	1.02dr
Control Delay	11.0	20.0	300.6	369.2	75.3	76.4	305.1	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	20.0	300.6	369.2	75.3	76.4	305.1	11.7
Queue Length 50th (ft)	22	13	~1325	~363	83	~319	~213	66
Queue Length 95th (ft)	37	25	#1590	#479	#154	#396	#312	121
Internal Link Dist (ft)		430				303		392
Turn Bay Length (ft)	175		300	150	175		140	
Base Capacity (vph)	1870	1906	958	429	288	1504	291	1750
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	1.61	1.73	0.88	1.06	1.57	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

APPENDIX D

HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE WORKSHEETS

General Plan Buildout (2040) No Project

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	979	121	75	1350	151	233	533	185	303	494	168
Future Volume (veh/h)	164	979	121	75	1350	151	233	533	185	303	494	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	178	1064	132	82	1467	164	253	579	201	329	537	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	2101	260	217	1424	159	279	746	333	327	841	375
Arrive On Green	0.10	0.46	0.46	0.31	0.31	0.31	0.16	0.21	0.21	0.18	0.24	0.24
Sat Flow, veh/h	1781	4602	570	468	4660	521	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	178	787	409	82	1071	560	253	579	201	329	537	183
Grp Sat Flow(s),veh/h/ln	1781	1702	1768	468	1702	1777	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.0	14.7	14.7	13.5	27.5	27.5	12.6	13.8	10.3	16.5	12.2	9.0
Cycle Q Clear(g_c), s	9.0	14.7	14.7	14.7	27.5	27.5	12.6	13.8	10.3	16.5	12.2	9.0
Prop In Lane	1.00		0.32	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	1555	807	217	1040	543	279	746	333	327	841	375
V/C Ratio(X)	0.99	0.51	0.51	0.38	1.03	1.03	0.91	0.78	0.60	1.01	0.64	0.49
Avail Cap(c_a), veh/h	180	1555	807	217	1040	543	279	746	333	327	841	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	17.3	17.3	27.3	31.3	31.3	37.3	33.6	32.2	36.8	30.9	29.6
Incr Delay (d2), s/veh	63.5	0.3	0.5	1.1	35.9	46.8	30.8	7.8	7.9	51.7	3.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.6	5.9	1.6	16.2	18.5	7.8	6.7	4.7	11.8	5.6	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.9	17.5	17.8	28.4	67.1	78.0	68.1	41.3	40.1	88.4	34.6	34.1
LnGrp LOS	F	B	B	C	F	F	E	D	D	F	C	C
Approach Vol, veh/h		1374			1713			1033			1049	
Approach Delay, s/veh		28.8			68.8			47.6			51.4	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	23.4		45.6	18.6	25.8	13.6	32.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	18.9		41.1	14.1	21.3	9.1	27.5
Max Q Clear Time (g_c+I1), s	18.5	15.8		16.7	14.6	14.2	11.0	29.5
Green Ext Time (p_c), s	0.0	1.4		9.6	0.0	2.5	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			50.4
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	621	283	220	751	0	326	0	190	0	0	0
Future Volume (veh/h)	0	621	283	220	751	0	326	0	190	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	675	308	239	816	0	354	0	207	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	853	380	328	1424	0	443	0	1483	0	519	0
Arrive On Green	0.00	0.24	0.24	0.10	0.40	0.00	0.12	0.00	0.47	0.00	0.00	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	3563	0	3170	0	1870	0
Grp Volume(v), veh/h	0	675	308	239	816	0	354	0	207	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	12.2	12.5	4.6	12.2	0.0	6.6	0.0	2.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.2	12.5	4.6	12.2	0.0	6.6	0.0	2.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	853	380	328	1424	0	443	0	1483	0	519	0
V/C Ratio(X)	0.00	0.79	0.81	0.73	0.57	0.00	0.80	0.00	0.14	0.00	0.00	0.00
Avail Cap(c_a), veh/h	130	935	417	328	1424	0	443	0	1483	0	519	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.4	24.5	30.1	15.9	0.0	29.1	0.0	10.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.3	10.6	7.9	0.6	0.0	10.0	0.0	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	5.6	2.2	4.7	0.0	3.4	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.7	35.1	38.0	16.5	0.0	39.2	0.0	10.6	0.0	0.0	0.0
LnGrp LOS	A	C	D	D	B	A	D	A	B	A	A	A
Approach Vol, veh/h		983			1055			561			0	
Approach Delay, s/veh		30.7			21.4			28.6			0.0	
Approach LOS		C			C			C				

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		36.5	11.0	20.9	13.0	23.5	0.0	31.9
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		32.0	6.5	18.0	8.5	19.0	5.0	19.5
Max Q Clear Time (g_c+I1), s		4.5	6.6	14.5	8.6	0.0	0.0	14.2
Green Ext Time (p_c), s		0.8	0.0	1.9	0.0	0.0	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	791	95	46	1172	118	181	426	52	238	387	156
Future Volume (veh/h)	93	791	95	46	1172	118	181	426	52	238	387	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	860	103	50	1274	128	197	463	57	259	421	170
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	1586	707	65	1348	135	290	579	258	377	525	210
Arrive On Green	0.07	0.45	0.45	0.04	0.41	0.41	0.16	0.16	0.16	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3262	327	1781	3554	1585	1781	2479	990
Grp Volume(v), veh/h	101	860	103	50	692	710	197	463	57	259	301	290
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1812	1781	1777	1585	1781	1777	1692
Q Serve(g_s), s	7.0	22.3	4.8	3.5	47.1	47.6	13.1	15.8	3.9	16.9	20.2	20.6
Cycle Q Clear(g_c), s	7.0	22.3	4.8	3.5	47.1	47.6	13.1	15.8	3.9	16.9	20.2	20.6
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	123	1586	707	65	734	749	290	579	258	377	376	358
V/C Ratio(X)	0.82	0.54	0.15	0.77	0.94	0.95	0.68	0.80	0.22	0.69	0.80	0.81
Avail Cap(c_a), veh/h	123	1586	707	132	747	761	290	579	258	564	563	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	25.5	20.6	60.2	35.5	35.6	49.6	50.7	45.8	45.8	47.1	47.2
Incr Delay (d2), s/veh	33.9	0.4	0.1	17.6	20.0	20.8	12.1	11.1	2.0	2.2	4.8	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	9.3	1.8	1.9	23.8	24.7	6.8	7.9	1.7	7.6	9.4	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	25.9	20.7	77.8	55.5	56.4	61.7	61.8	47.7	48.0	51.9	52.9
LnGrp LOS	F	C	C	E	E	E	E	E	D	D	D	D
Approach Vol, veh/h		1064			1452			717			850	
Approach Delay, s/veh		31.6			56.7			60.7			51.1	
Approach LOS		C			E			E			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	9.1	60.7		31.2	13.2	56.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	9.3	52.3		39.9	8.7	52.9				
Max Q Clear Time (g_c+I1), s		17.8	5.5	24.3		22.6	9.0	49.6				
Green Ext Time (p_c), s		1.0	0.0	7.0		4.1	0.0	2.4				

Intersection Summary	
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	889	68	79	1370	128	108	430	60	89	425	104
Future Volume (veh/h)	103	889	68	79	1370	128	108	430	60	89	425	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	966	74	86	1489	139	117	467	65	97	462	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	1746	133	114	1637	153	305	1087	151	324	983	239
Arrive On Green	0.08	0.36	0.36	0.06	0.34	0.34	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	4838	370	1781	4751	443	838	3135	434	872	2835	689
Grp Volume(v), veh/h	112	679	361	86	1067	561	117	264	268	97	288	287
Grp Sat Flow(s),veh/h/ln	1781	1702	1804	1781	1702	1791	838	1777	1792	872	1777	1746
Q Serve(g_s), s	3.6	9.4	9.5	2.8	17.7	17.7	7.5	6.7	6.8	5.7	7.5	7.6
Cycle Q Clear(g_c), s	3.6	9.4	9.5	2.8	17.7	17.7	15.1	6.7	6.8	12.5	7.5	7.6
Prop In Lane	1.00		0.21	1.00		0.25	1.00		0.24	1.00		0.39
Lane Grp Cap(c), veh/h	143	1229	651	114	1173	617	305	616	621	324	616	606
V/C Ratio(X)	0.78	0.55	0.55	0.75	0.91	0.91	0.38	0.43	0.43	0.30	0.47	0.47
Avail Cap(c_a), veh/h	166	1229	651	217	1180	621	305	616	621	324	616	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	15.1	15.1	27.2	18.5	18.5	21.0	14.8	14.8	19.6	15.1	15.1
Incr Delay (d2), s/veh	18.7	0.5	1.0	9.7	10.4	17.5	3.6	2.2	2.2	2.4	2.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.1	3.4	1.4	7.5	9.1	1.7	2.8	2.9	1.3	3.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	15.6	16.1	36.9	28.9	36.0	24.6	17.0	17.0	22.0	17.6	17.7
LnGrp LOS	D	B	B	D	C	D	C	B	B	C	B	B
Approach Vol, veh/h		1152			1714			649			672	
Approach Delay, s/veh		18.7			31.6			18.4			18.3	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.0	8.3	25.8		25.0	9.3	24.9
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		20.5	7.2	18.8		20.5	5.5	20.5
Max Q Clear Time (g_c+I1), s		17.1	4.8	11.5		14.5	5.6	19.7
Green Ext Time (p_c), s		1.3	0.0	3.7		2.1	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	889	72	121	1259	92	194	643	59	208	539	131
Future Volume (veh/h)	106	889	72	121	1259	92	194	643	59	208	539	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	966	78	132	1368	100	211	699	64	226	586	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	1383	111	165	1451	106	238	893	398	256	928	414
Arrive On Green	0.08	0.29	0.29	0.09	0.30	0.30	0.13	0.25	0.25	0.14	0.26	0.26
Sat Flow, veh/h	1781	4816	388	1781	4856	355	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	115	682	362	132	959	509	211	699	64	226	586	142
Grp Sat Flow(s),veh/h/ln	1781	1702	1801	1781	1702	1806	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.1	14.3	14.3	5.8	22.0	22.0	9.3	14.7	2.5	10.0	11.7	5.8
Cycle Q Clear(g_c), s	5.1	14.3	14.3	5.8	22.0	22.0	9.3	14.7	2.5	10.0	11.7	5.8
Prop In Lane	1.00		0.22	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	977	517	165	1017	540	238	893	398	256	928	414
V/C Ratio(X)	0.79	0.70	0.70	0.80	0.94	0.94	0.89	0.78	0.16	0.88	0.63	0.34
Avail Cap(c_a), veh/h	145	977	517	203	1017	540	238	893	398	256	928	414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	25.4	25.4	35.6	27.4	27.4	34.0	27.9	23.4	33.6	26.1	24.0
Incr Delay (d2), s/veh	25.6	2.2	4.2	16.5	16.3	25.3	30.2	6.8	0.9	28.1	3.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.7	6.4	3.2	10.6	12.6	5.9	6.8	1.0	6.2	5.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	27.6	29.6	52.1	43.7	52.7	64.3	34.7	24.2	61.7	29.4	26.2
LnGrp LOS	E	C	C	D	D	D	E	C	C	E	C	C
Approach Vol, veh/h		1159			1600			974			954	
Approach Delay, s/veh		31.6			47.2			40.4			36.6	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	24.6	11.9	27.5	15.2	25.4	11.0	28.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	20.1	9.1	21.3	10.7	20.9	6.5	23.9
Max Q Clear Time (g_c+I1), s	12.0	16.7	7.8	16.3	11.3	13.7	7.1	24.0
Green Ext Time (p_c), s	0.0	1.6	0.0	2.8	0.0	2.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	234	0	262	465	561	0	0	1030	520
Future Volume (veh/h)	0	0	0	234	0	262	465	561	0	0	1030	520
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				254	0	285	505	610	0	0	1120	565
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				768	0	342	606	2304	0	0	1379	642
Arrive On Green				0.22	0.00	0.22	0.18	0.65	0.00	0.00	0.41	0.41
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	3572	1585
Grp Volume(v), veh/h				254	0	285	505	610	0	0	1120	565
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				4.0	0.0	11.4	9.3	4.8	0.0	0.0	19.3	21.8
Cycle Q Clear(g_c), s				4.0	0.0	11.4	9.3	4.8	0.0	0.0	19.3	21.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				768	0	342	606	2304	0	0	1379	642
V/C Ratio(X)				0.33	0.00	0.83	0.83	0.26	0.00	0.00	0.81	0.88
Avail Cap(c_a), veh/h				975	0	434	653	2304	0	0	1379	642
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.9	0.0	24.8	26.3	4.9	0.0	0.0	17.5	18.2
Incr Delay (d2), s/veh				0.3	0.0	10.7	8.6	0.3	0.0	0.0	5.3	15.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	4.8	4.3	1.4	0.0	0.0	7.7	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.2	0.0	35.6	34.9	5.2	0.0	0.0	22.8	34.1
LnGrp LOS				C	A	D	C	A	A	A	C	C
Approach Vol, veh/h					539			1115			1685	
Approach Delay, s/veh					29.2			18.7			26.6	
Approach LOS					C			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		47.4			16.1	31.3		18.8				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		42.9			12.5	25.9		18.1				
Max Q Clear Time (g_c+I1), s		6.8			11.3	23.8		13.4				
Green Ext Time (p_c), s		4.7			0.3	1.8		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			24.4									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	0	270	0	0	0	0	972	297	318	799	0
Future Volume (veh/h)	62	0	270	0	0	0	0	972	297	318	799	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	45	0	317				0	1057	323	346	868	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	275	0	489				0	1552	692	474	2362	0
Arrive On Green	0.15	0.00	0.15				0.00	0.44	0.44	0.14	0.66	0.00
Sat Flow, veh/h	1781	0	3170				0	3647	1585	3456	3647	0
Grp Volume(v), veh/h	45	0	317				0	1057	323	346	868	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1728	1777	0
Q Serve(g_s), s	1.1	0.0	4.7				0.0	11.8	7.2	4.8	5.4	0.0
Cycle Q Clear(g_c), s	1.1	0.0	4.7				0.0	11.8	7.2	4.8	5.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	275	0	489				0	1552	692	474	2362	0
V/C Ratio(X)	0.16	0.00	0.65				0.00	0.68	0.47	0.73	0.37	0.00
Avail Cap(c_a), veh/h	646	0	1149				0	1552	692	522	2362	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.2	0.0	19.7				0.0	11.2	9.9	20.5	3.7	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.5				0.0	2.4	2.3	4.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.6				0.0	4.2	2.4	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	21.2				0.0	13.6	12.1	25.2	4.1	0.0
LnGrp LOS	B	A	C				A	B	B	C	A	A
Approach Vol, veh/h		362						1380			1214	
Approach Delay, s/veh		20.9						13.3			10.1	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.3	26.2		12.2		37.5
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	7.5	21.0		18.0		33.0
Max Q Clear Time (g_c+I1), s	6.8	13.8		6.7		7.4
Green Ext Time (p_c), s	0.1	4.6		1.0		6.8

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	9	24	78	13	112	25	796	131	68	877	9
Future Volume (veh/h)	4	9	24	78	13	112	25	796	131	68	877	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	10	26	85	14	122	27	865	142	74	953	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	74	158	371	48	214	468	1871	307	449	2206	23
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	75	498	1065	1301	325	1442	583	3055	502	560	3603	38
Grp Volume(v), veh/h	40	0	0	99	0	122	27	503	504	74	470	493
Grp Sat Flow(s),veh/h/ln	1639	0	0	1626	0	1442	583	1777	1780	560	1777	1864
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	3.0	1.0	5.7	5.7	3.1	5.2	5.2
Cycle Q Clear(g_c), s	3.0	0.0	0.0	1.9	0.0	3.0	6.2	5.7	5.7	8.8	5.2	5.2
Prop In Lane	0.10		0.65	0.86		1.00	1.00		0.28	1.00		0.02
Lane Grp Cap(c), veh/h	348	0	0	419	0	214	468	1088	1090	449	1088	1141
V/C Ratio(X)	0.11	0.00	0.00	0.24	0.00	0.57	0.06	0.46	0.46	0.16	0.43	0.43
Avail Cap(c_a), veh/h	879	0	0	891	0	691	468	1088	1090	449	1088	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	0.0	14.4	0.0	14.9	5.5	3.9	3.9	6.3	3.8	3.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	2.4	0.2	1.4	1.4	0.8	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.7	0.0	0.9	0.1	1.2	1.2	0.3	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	0.0	0.0	14.7	0.0	17.3	5.7	5.4	5.3	7.1	5.1	5.0
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		40			221			1034			1037	
Approach Delay, s/veh		14.1			16.1			5.4			5.2	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.5	10.1	27.5	10.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.0	18.0	23.0	18.0
Max Q Clear Time (g_c+I1), s	8.2	5.0	10.8	5.0
Green Ext Time (p_c), s	6.1	0.1	5.3	1.0

Intersection Summary	
HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (veh/h)	193	414	0	748	364	1	986	331	0	0
Future Volume (veh/h)	193	414	0	748	364	1	986	331	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	210	450	0	813	396	1	1072	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	0	2	2	2	2	2		
Cap, veh/h	588	523	0	1629	759	77	1668			
Arrive On Green	0.33	0.33	0.00	0.48	0.48	0.48	0.48	0.00		
Sat Flow, veh/h	1781	1585	0	3572	1585	0	3486	1585		
Grp Volume(v), veh/h	210	450	0	813	396	575	498	0		
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1702	1585	1869	1617	1585		
Q Serve(g_s), s	4.2	12.5	0.0	7.7	8.2	0.0	10.9	0.0		
Cycle Q Clear(g_c), s	4.2	12.5	0.0	7.7	8.2	10.9	10.9	0.0		
Prop In Lane	1.00	1.00	0.00		1.00	0.00		1.00		
Lane Grp Cap(c), veh/h	588	523	0	1629	759	971	774			
V/C Ratio(X)	0.36	0.86	0.00	0.50	0.52	0.59	0.64			
Avail Cap(c_a), veh/h	701	624	0	1629	759	971	774			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	12.0	14.7	0.0	8.4	8.5	9.2	9.2	0.0		
Incr Delay (d2), s/veh	0.4	10.3	0.0	1.1	2.6	2.7	4.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.5	5.3	0.0	2.3	2.6	4.0	3.7	0.0		
Unsig. Movement Delay, s/veh										
LnGrp Delay(d),s/veh	12.3	25.0	0.0	9.5	11.1	11.9	13.3	0.0		
LnGrp LOS	B	C	A	A	B	B	B			
Approach Vol, veh/h	660			1209			1073	A		
Approach Delay, s/veh	21.0			10.0			12.6			
Approach LOS	C			B			B			

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		27.0		20.0		27.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		22.5		18.5		22.5
Max Q Clear Time (g_c+I1), s		10.2		14.5		12.9
Green Ext Time (p_c), s		6.5		1.0		4.8

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	796	207	181	1272	121	80	735	231	58	745	83
Future Volume (veh/h)	117	796	207	181	1272	121	80	735	231	58	745	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	865	225	197	1383	132	87	799	251	63	810	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	1186	307	229	1570	150	204	1255	560	209	1139	127
Arrive On Green	0.09	0.29	0.29	0.13	0.33	0.33	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	4041	1045	1781	4741	452	619	3554	1585	537	3224	358
Grp Volume(v), veh/h	127	728	362	197	993	522	87	799	251	63	446	454
Grp Sat Flow(s),veh/h/ln	1781	1702	1682	1781	1702	1789	619	1777	1585	537	1777	1806
Q Serve(g_s), s	4.2	11.5	11.6	6.5	16.5	16.5	8.2	11.3	7.3	6.6	13.0	13.0
Cycle Q Clear(g_c), s	4.2	11.5	11.6	6.5	16.5	16.5	21.2	11.3	7.3	17.9	13.0	13.0
Prop In Lane	1.00		0.62	1.00		0.25	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	162	999	494	229	1127	592	204	1255	560	209	628	638
V/C Ratio(X)	0.79	0.73	0.73	0.86	0.88	0.88	0.43	0.64	0.45	0.30	0.71	0.71
Avail Cap(c_a), veh/h	163	1021	505	229	1146	602	204	1255	560	209	628	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	19.0	19.1	25.6	19.0	19.0	26.0	16.2	14.9	23.7	16.8	16.8
Incr Delay (d2), s/veh	21.7	2.6	5.3	26.9	8.1	14.1	6.4	2.5	2.6	3.7	6.7	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.4	4.7	4.2	6.9	8.2	1.5	4.5	2.7	1.0	5.9	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	21.7	24.4	52.5	27.1	33.0	32.4	18.7	17.5	27.3	23.5	23.4
LnGrp LOS	D	C	C	D	C	C	C	B	B	C	C	C
Approach Vol, veh/h		1217			1712			1137			963	
Approach Delay, s/veh		25.3			31.8			19.5			23.7	
Approach LOS		C			C			B			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.7	12.2	22.1		25.7	9.9	24.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.8	7.7	18.0		20.8	5.5	20.2				
Max Q Clear Time (g_c+I1), s		23.2	8.5	13.6		19.9	6.2	18.5				
Green Ext Time (p_c), s		0.0	0.0	2.6		0.6	0.0	1.3				

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	964	87	237	1466	140	103	549	217	66	380	122
Future Volume (veh/h)	119	964	87	237	1466	140	103	549	217	66	380	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	1048	95	258	1593	152	112	597	236	72	413	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	1412	128	289	1739	166	314	1119	499	237	1119	499
Arrive On Green	0.09	0.30	0.30	0.16	0.37	0.37	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1781	4765	431	1781	4741	452	861	3554	1585	659	3554	1585
Grp Volume(v), veh/h	129	748	395	258	1143	602	112	597	236	72	413	133
Grp Sat Flow(s),veh/h/ln	1781	1702	1793	1781	1702	1789	861	1777	1585	659	1777	1585
Q Serve(g_s), s	4.2	11.8	11.9	8.5	19.1	19.2	6.9	8.3	7.2	6.0	5.4	3.7
Cycle Q Clear(g_c), s	4.2	11.8	11.9	8.5	19.1	19.2	12.3	8.3	7.2	14.3	5.4	3.7
Prop In Lane	1.00		0.24	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	164	1009	531	289	1248	656	314	1119	499	237	1119	499
V/C Ratio(X)	0.79	0.74	0.74	0.89	0.92	0.92	0.36	0.53	0.47	0.30	0.37	0.27
Avail Cap(c_a), veh/h	170	1027	541	289	1255	659	314	1119	499	237	1119	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	18.9	19.0	24.5	18.0	18.0	20.6	16.8	16.5	22.7	15.8	15.3
Incr Delay (d2), s/veh	20.6	2.9	5.4	27.2	10.5	17.8	3.1	1.8	3.2	3.3	0.9	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.5	5.1	5.4	8.2	9.9	1.6	3.3	2.7	1.1	2.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	21.8	24.4	51.7	28.6	35.8	23.8	18.7	19.6	26.0	16.8	16.6
LnGrp LOS	D	C	C	D	C	D	C	B	B	C	B	B
Approach Vol, veh/h		1272			2003			945			618	
Approach Delay, s/veh		25.2			33.7			19.5			17.8	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.3	14.2	22.2		23.3	10.0	26.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.8	9.7	18.0		18.8	5.7	22.0				
Max Q Clear Time (g_c+I1), s		14.3	10.5	13.9		16.3	6.2	21.2				
Green Ext Time (p_c), s		2.2	0.0	2.6		0.9	0.0	0.7				

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	1021	89	40	1450	209	89	613	25	164	422	269
Future Volume (veh/h)	201	1021	89	40	1450	209	89	613	25	164	422	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	218	1110	97	43	1576	227	97	666	27	178	459	292
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	2216	193	65	1629	234	274	770	31	248	865	386
Arrive On Green	0.14	0.46	0.46	0.04	0.36	0.36	0.06	0.22	0.22	0.08	0.24	0.24
Sat Flow, veh/h	1781	4782	418	1781	4510	648	1781	3481	141	1781	3554	1585
Grp Volume(v), veh/h	218	790	417	43	1189	614	97	340	353	178	459	292
Grp Sat Flow(s),veh/h/ln	1781	1702	1795	1781	1702	1754	1781	1777	1845	1781	1777	1585
Q Serve(g_s), s	10.8	14.6	14.6	2.1	30.8	31.0	3.7	16.6	16.6	7.0	10.1	15.4
Cycle Q Clear(g_c), s	10.8	14.6	14.6	2.1	30.8	31.0	3.7	16.6	16.6	7.0	10.1	15.4
Prop In Lane	1.00		0.23	1.00		0.37	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	247	1577	832	65	1229	633	274	393	408	248	865	386
V/C Ratio(X)	0.88	0.50	0.50	0.66	0.97	0.97	0.35	0.86	0.87	0.72	0.53	0.76
Avail Cap(c_a), veh/h	247	1577	832	129	1229	633	274	393	408	248	865	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	16.9	16.9	42.8	28.2	28.3	25.2	33.8	33.8	26.4	29.6	31.6
Incr Delay (d2), s/veh	28.6	0.2	0.5	10.8	18.2	28.3	0.8	21.6	21.1	9.5	2.3	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	5.4	5.7	1.1	14.8	17.1	1.6	9.3	9.6	3.6	4.6	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.6	17.1	17.4	53.6	46.5	56.6	26.0	55.4	54.9	36.0	31.9	44.6
LnGrp LOS	E	B	B	D	D	E	C	E	D	D	C	D
Approach Vol, veh/h		1425			1846			790			929	
Approach Delay, s/veh		24.8			50.0			51.5			36.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	24.4	7.8	46.2	9.6	26.4	17.0	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.1	19.9	6.5	38.5	5.1	21.9	12.5	32.5
Max Q Clear Time (g_c+I1), s	9.0	18.6	4.1	16.6	5.7	17.4	12.8	33.0
Green Ext Time (p_c), s	0.0	0.6	0.0	8.4	0.0	1.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	1211	13	272	1548	73	150	1125	258	92	500	177
Future Volume (veh/h)	260	1211	13	272	1548	73	150	1125	258	92	500	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	283	1316	14	296	1683	79	163	1223	280	100	543	192
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	1378	15	308	1487	70	411	1094	248	147	1082	483
Arrive On Green	0.14	0.26	0.26	0.17	0.30	0.30	0.13	0.38	0.38	0.05	0.30	0.30
Sat Flow, veh/h	1781	5209	55	1781	4998	234	1781	2878	651	1781	3554	1585
Grp Volume(v), veh/h	283	860	470	296	1146	616	163	749	754	100	543	192
Grp Sat Flow(s),veh/h/ln	1781	1702	1860	1781	1702	1828	1781	1777	1753	1781	1777	1585
Q Serve(g_s), s	19.5	34.7	34.7	23.0	41.5	41.5	7.8	53.0	53.0	5.3	17.5	13.4
Cycle Q Clear(g_c), s	19.5	34.7	34.7	23.0	41.5	41.5	7.8	53.0	53.0	5.3	17.5	13.4
Prop In Lane	1.00		0.03	1.00		0.13	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	249	901	492	308	1013	544	411	675	666	147	1082	483
V/C Ratio(X)	1.14	0.95	0.95	0.96	1.13	1.13	0.40	1.11	1.13	0.68	0.50	0.40
Avail Cap(c_a), veh/h	249	901	492	308	1013	544	411	675	666	282	1350	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	50.5	50.5	57.2	49.0	49.0	25.2	43.2	43.2	36.9	39.8	38.4
Incr Delay (d2), s/veh	98.8	19.9	29.4	40.9	71.7	80.5	2.9	68.8	76.9	5.4	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	17.0	19.8	13.7	27.3	30.7	3.6	35.4	36.4	2.5	7.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.7	70.3	79.9	98.1	120.7	129.5	28.0	112.1	120.1	42.3	40.2	38.9
LnGrp LOS	F	E	E	F	F	F	C	F	F	D	D	D
Approach Vol, veh/h		1613			2058			1666			835	
Approach Delay, s/veh		88.6			120.1			107.5			40.1	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	57.5	28.6	41.4	22.5	47.0	24.0	46.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	53.0	24.1	36.9	18.0	53.0	19.5	41.5
Max Q Clear Time (g_c+I1), s	7.3	55.0	25.0	36.7	9.8	19.5	21.5	43.5
Green Ext Time (p_c), s	0.1	0.0	0.0	0.2	0.2	4.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	97.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	999	214	203	1179	240	202	641	99	227	1076	151
Future Volume (veh/h)	136	999	214	203	1179	240	202	641	99	227	1076	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	1086	233	221	1282	261	220	697	108	247	1170	164
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1179	253	245	1188	530	215	1241	190	275	1108	494
Arrive On Green	0.08	0.28	0.28	0.14	0.33	0.33	0.12	0.28	0.28	0.15	0.31	0.31
Sat Flow, veh/h	1781	4209	903	1781	3554	1585	1781	4466	685	1781	3554	1585
Grp Volume(v), veh/h	148	878	441	221	1282	261	220	530	275	247	1170	164
Grp Sat Flow(s),veh/h/ln	1781	1702	1708	1781	1777	1585	1781	1702	1747	1781	1777	1585
Q Serve(g_s), s	10.0	30.0	30.1	14.7	40.1	15.8	14.5	16.0	16.2	16.3	37.4	9.5
Cycle Q Clear(g_c), s	10.0	30.0	30.1	14.7	40.1	15.8	14.5	16.0	16.2	16.3	37.4	9.5
Prop In Lane	1.00		0.53	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	148	953	478	245	1188	530	215	946	486	275	1108	494
V/C Ratio(X)	1.00	0.92	0.92	0.90	1.08	0.49	1.02	0.56	0.57	0.90	1.06	0.33
Avail Cap(c_a), veh/h	148	953	478	245	1188	530	215	946	486	319	1108	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	41.9	41.9	51.0	40.0	31.8	52.8	37.0	37.1	49.8	41.3	31.7
Incr Delay (d2), s/veh	72.9	13.9	23.4	32.9	50.4	0.7	67.2	2.4	4.7	24.2	43.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	14.0	15.4	8.6	25.1	6.0	10.4	6.8	7.4	9.0	22.4	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.9	55.8	65.4	83.8	90.4	32.6	119.9	39.4	41.9	74.0	84.5	33.5
LnGrp LOS	F	E	E	F	F	C	F	D	D	E	F	C
Approach Vol, veh/h		1467			1764			1025			1581	
Approach Delay, s/veh		66.0			81.0			57.4			77.6	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	37.9	21.0	38.1	19.0	41.9	14.5	44.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	21.5	30.4	16.5	33.6	14.5	37.4	10.0	40.1
Max Q Clear Time (g_c+I1), s	18.3	18.2	16.7	32.1	16.5	39.4	12.0	42.1
Green Ext Time (p_c), s	0.2	3.9	0.0	1.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	72.1
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	794	285	262	1024	35	340	741	242	121	1356	177
Future Volume (veh/h)	99	794	285	262	1024	35	340	741	242	121	1356	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	863	310	285	1113	38	370	805	263	132	1474	192
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	1184	368	349	1384	47	442	1687	524	168	1721	224
Arrive On Green	0.06	0.23	0.23	0.10	0.27	0.27	0.13	0.33	0.33	0.09	0.30	0.30
Sat Flow, veh/h	3456	5106	1585	3456	5070	173	3456	5106	1585	1781	5805	755
Grp Volume(v), veh/h	108	863	310	285	747	404	370	805	263	132	1225	441
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1839	1728	1702	1585	1781	1609	1734
Q Serve(g_s), s	2.3	11.6	13.9	6.0	15.2	15.2	7.8	9.3	9.9	5.4	17.8	17.8
Cycle Q Clear(g_c), s	2.3	11.6	13.9	6.0	15.2	15.2	7.8	9.3	9.9	5.4	17.8	17.8
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	208	1184	368	349	929	502	442	1687	524	168	1431	514
V/C Ratio(X)	0.52	0.73	0.84	0.82	0.80	0.80	0.84	0.48	0.50	0.79	0.86	0.86
Avail Cap(c_a), veh/h	237	1239	384	349	936	506	442	1687	524	271	1431	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	26.3	27.2	32.7	25.1	25.1	31.6	19.8	20.0	32.9	24.6	24.6
Incr Delay (d2), s/veh	2.0	2.1	15.1	13.9	5.1	9.2	13.1	1.0	3.4	7.9	6.8	16.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.5	6.4	3.0	6.2	7.3	3.8	3.4	3.8	2.5	6.9	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	28.4	42.3	46.6	30.3	34.3	44.7	20.7	23.4	40.8	31.4	41.3
LnGrp LOS	D	C	D	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		1281			1436			1438			1798	
Approach Delay, s/veh		32.4			34.7			27.4			34.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	29.0	12.0	21.7	14.0	26.5	9.0	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.3	20.2	7.5	18.0	9.5	22.0	5.1	20.4
Max Q Clear Time (g_c+I1), s	7.4	11.9	8.0	15.9	9.8	19.8	4.3	17.2
Green Ext Time (p_c), s	0.1	3.8	0.0	1.4	0.0	1.8	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	361	418	25	240	1591	231	171	1476	318	288	1507	660
Future Volume (veh/h)	361	418	25	240	1591	231	171	1476	318	288	1507	660
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	392	454	27	261	1729	251	186	1604	346	313	1638	717
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	592	35	956	1413	439	760	1415	349	910	1345	735
Arrive On Green	0.12	0.12	0.12	0.28	0.28	0.28	0.22	0.22	0.22	0.26	0.26	0.26
Sat Flow, veh/h	3456	4931	291	3456	5106	1585	3456	6434	1585	3456	5106	2790
Grp Volume(v), veh/h	392	312	169	261	1729	251	186	1604	346	313	1638	717
Grp Sat Flow(s),veh/h/ln	1728	1702	1818	1728	1702	1585	1728	1609	1585	1728	1702	1395
Q Serve(g_s), s	16.9	13.3	13.5	8.9	41.5	20.4	6.7	33.0	32.7	11.0	39.5	38.2
Cycle Q Clear(g_c), s	16.9	13.3	13.5	8.9	41.5	20.4	6.7	33.0	32.7	11.0	39.5	38.2
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	408	218	956	1413	439	760	1415	349	910	1345	735
V/C Ratio(X)	0.95	0.76	0.77	0.27	1.22	0.57	0.24	1.13	0.99	0.34	1.22	0.98
Avail Cap(c_a), veh/h	415	408	218	956	1413	439	760	1415	349	910	1345	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.5	63.9	64.0	42.4	54.3	46.6	48.2	58.5	58.4	44.8	55.3	54.8
Incr Delay (d2), s/veh	30.6	8.3	15.8	0.2	107.3	1.8	0.8	69.3	46.3	1.0	105.2	27.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	6.2	7.2	3.8	31.5	8.2	2.9	19.9	17.3	4.8	29.6	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.1	72.3	79.8	42.6	161.6	48.4	49.0	127.8	104.7	45.8	160.4	82.6
LnGrp LOS	F	E	E	D	F	D	D	F	F	D	F	F
Approach Vol, veh/h		873			2241			2136			2668	
Approach Delay, s/veh		84.4			135.0			117.2			126.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	37.5	22.5	44.0	46.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0	18.0	39.5	41.5
Max Q Clear Time (g_c+I1), s	35.0	18.9	41.5	43.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	121.6
HCM 6th LOS	F

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	80	436	28	437	462	42	92	740	407	89	1108	95
Future Volume (veh/h)	80	436	28	437	462	42	92	740	407	89	1108	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	474	30	475	502	46	100	804	442	97	1204	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	599	267	479	1333	594	154	1125	524	122	1174	100
Arrive On Green	0.06	0.17	0.17	0.27	0.38	0.38	0.04	0.33	0.33	0.07	0.35	0.35
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3404	1585	1781	3313	283
Grp Volume(v), veh/h	87	474	30	475	502	46	100	804	442	97	645	662
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1781	1777	1819
Q Serve(g_s), s	5.3	14.0	1.8	29.2	11.3	2.1	3.1	22.7	28.4	5.9	38.9	38.9
Cycle Q Clear(g_c), s	5.3	14.0	1.8	29.2	11.3	2.1	3.1	22.7	28.4	5.9	38.9	38.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	111	599	267	479	1333	594	154	1125	524	122	630	645
V/C Ratio(X)	0.78	0.79	0.11	0.99	0.38	0.08	0.65	0.71	0.84	0.80	1.02	1.03
Avail Cap(c_a), veh/h	193	599	267	479	1333	594	161	1125	524	149	630	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	43.8	38.7	40.0	25.0	22.1	51.6	32.2	34.1	50.4	35.4	35.4
Incr Delay (d2), s/veh	11.4	10.3	0.9	39.1	0.8	0.3	8.5	2.2	12.0	21.2	42.1	42.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.9	0.7	17.5	4.8	0.8	1.5	9.6	12.5	3.3	23.7	24.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	54.1	39.5	79.1	25.8	22.3	60.1	34.4	46.1	71.6	77.5	78.0
LnGrp LOS	E	D	D	E	C	C	E	C	D	E	F	F
Approach Vol, veh/h		591			1023			1346			1404	
Approach Delay, s/veh		54.5			50.4			40.1			77.4	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	45.7	12.0	40.8	34.0	23.0	9.4	43.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.9	36.1	9.2	34.8	29.5	18.5	5.1	38.9
Max Q Clear Time (g_c+I1), s	7.3	13.3	7.9	30.4	31.2	16.0	5.1	40.9
Green Ext Time (p_c), s	0.1	3.3	0.0	3.0	0.0	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.5
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	245	1087	294	131	67	546	1579	262	103	900	24
Future Volume (veh/h)	28	245	1087	294	131	67	546	1579	262	103	900	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	266	1182	320	142	73	593	1716	285	112	978	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	1259	608	189	620	608	481	1670	745	101	908	24
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.27	0.47	0.47	0.06	0.26	0.26
Sat Flow, veh/h	126	3285	1585	368	1617	1585	1781	3554	1585	1781	3536	94
Grp Volume(v), veh/h	296	0	1182	320	142	73	593	1716	285	112	491	513
Grp Sat Flow(s),veh/h/ln	1794	1617	1585	368	1617	1585	1781	1777	1585	1781	1777	1853
Q Serve(g_s), s	0.5	0.0	57.5	57.5	8.9	4.5	40.5	70.5	17.4	8.5	38.5	38.5
Cycle Q Clear(g_c), s	17.4	0.0	57.5	57.5	8.9	4.5	40.5	70.5	17.4	8.5	38.5	38.5
Prop In Lane	0.10		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	714	620	608	189	620	608	481	1670	745	101	456	476
V/C Ratio(X)	0.41	0.00	1.95	1.69	0.23	0.12	1.23	1.03	0.38	1.11	1.08	1.08
Avail Cap(c_a), veh/h	714	620	608	189	620	608	481	1670	745	101	456	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	46.2	53.6	31.3	29.9	54.8	39.8	25.7	70.7	55.8	55.8
Incr Delay (d2), s/veh	0.4	0.0	431.4	333.6	0.2	0.1	121.9	29.3	1.5	122.2	64.5	63.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.0	95.3	24.8	3.6	1.8	34.1	36.3	6.8	7.3	25.1	26.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	477.7	387.2	31.5	30.0	176.6	69.1	27.2	192.9	120.3	119.4
LnGrp LOS	C	A	F	F	C	C	F	F	C	F	F	F
Approach Vol, veh/h		1478			535			2594			1116	
Approach Delay, s/veh		388.9			244.0			89.1			127.2	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	75.0		62.0	45.0	43.0		62.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	8.5	70.5		57.5	40.5	38.5		57.5
Max Q Clear Time (g_c+I1), s	10.5	72.5		59.5	42.5	40.5		59.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		188.4
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	2145	212	0	1441	494	553	1021	5	149	1346	4
Future Volume (veh/h)	0	2145	212	0	1441	494	553	1021	5	149	1346	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	2332	230	0	1566	537	601	1110	5	162	1463	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	2191	212	0	1645	734	573	1763	8	187	1446	4
Arrive On Green	0.00	0.46	0.46	0.00	0.46	0.46	0.17	0.34	0.34	0.10	0.28	0.28
Sat Flow, veh/h	0	4902	458	0	3647	1585	3456	5247	24	1781	5257	14
Grp Volume(v), veh/h	0	1665	897	0	1566	537	601	720	395	162	947	520
Grp Sat Flow(s),veh/h/ln	0	1702	1788	0	1777	1585	1728	1702	1866	1781	1702	1868
Q Serve(g_s), s	0.0	64.8	64.8	0.0	59.2	38.5	23.2	24.9	24.9	12.5	38.5	38.5
Cycle Q Clear(g_c), s	0.0	64.8	64.8	0.0	59.2	38.5	23.2	24.9	24.9	12.5	38.5	38.5
Prop In Lane	0.00		0.26	0.00		1.00	1.00		0.01	1.00		0.01
Lane Grp Cap(c), veh/h	0	1576	828	0	1645	734	573	1144	627	187	936	514
V/C Ratio(X)	0.00	1.06	1.08	0.00	0.95	0.73	1.05	0.63	0.63	0.87	1.01	1.01
Avail Cap(c_a), veh/h	0	1576	828	0	1645	734	573	1144	627	239	936	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	37.6	37.6	0.0	36.1	30.5	58.4	39.1	39.1	61.7	50.8	50.8
Incr Delay (d2), s/veh	0.0	39.3	56.6	0.0	12.7	3.8	51.2	2.6	4.7	22.7	32.4	42.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	34.3	40.0	0.0	27.4	32.9	14.1	10.7	12.1	6.8	20.3	23.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	76.9	94.2	0.0	48.8	34.3	109.6	41.8	43.9	84.5	83.1	93.5
LnGrp LOS	A	F	F	A	D	C	F	D	D	F	F	F
Approach Vol, veh/h		2562			2103			1716			1629	
Approach Delay, s/veh		83.0			45.1			66.0			86.6	
Approach LOS		F			D			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	27.7	43.0		69.3	19.2	51.5		69.3
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	23.2	38.5		64.8	18.8	42.9		64.8
Max Q Clear Time (g_c+I1), s	25.2	40.5		66.8	14.5	26.9		61.2
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	6.3		3.1

Intersection Summary	
HCM 6th Ctrl Delay	70.1
HCM 6th LOS	E

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	119	488	84	276	140	0	90	1108	39	29	1471	363
Future Volume (veh/h)	119	488	84	276	140	0	90	1108	39	29	1471	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	530	91	300	152	0	98	1204	42	32	1599	395
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	533	619	276	369	846		139	2763	96	246	2785	865
Arrive On Green	0.17	0.17	0.17	0.16	0.17	0.00	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1781	3554	1585	1781	5106	1585	217	5066	177	446	5106	1585
Grp Volume(v), veh/h	129	530	91	300	152	0	98	809	437	32	1599	395
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1702	1585	217	1702	1839	446	1702	1585
Q Serve(g_s), s	5.7	15.8	5.5	15.0	2.8	0.0	36.9	15.5	15.5	5.0	22.6	16.5
Cycle Q Clear(g_c), s	5.7	15.8	5.5	15.0	2.8	0.0	59.5	15.5	15.5	20.5	22.6	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	533	619	276	369	846		139	1857	1003	246	2785	865
V/C Ratio(X)	0.24	0.86	0.33	0.81	0.18		0.70	0.44	0.44	0.13	0.57	0.46
Avail Cap(c_a), veh/h	533	619	276	384	889		139	1857	1003	246	2785	865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	43.7	39.5	31.5	39.1	0.0	40.7	14.8	14.8	20.9	16.4	15.0
Incr Delay (d2), s/veh	1.1	14.2	3.2	12.3	0.1	0.0	14.8	0.2	0.3	0.2	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	8.1	2.4	7.6	1.2	0.0	3.3	5.8	6.3	0.5	8.5	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	57.9	42.6	43.8	39.2	0.0	55.5	14.9	15.1	21.1	16.7	15.4
LnGrp LOS	C	E	D	D	D		E	B	B	C	B	B
Approach Vol, veh/h		750			452	A		1344			2026	
Approach Delay, s/veh		50.8			42.2			17.9			16.5	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.6	23.5		64.0	22.5	22.6		64.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.0	19.0		59.5	18.0	19.0		59.5
Max Q Clear Time (g_c+I1), s	17.0	17.8		61.5	7.7	4.8		24.6
Green Ext Time (p_c), s	0.1	0.5		0.0	0.2	0.7		19.6

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	290	1467	531	381	1105	365	289	1092	199	467	1348	373
Future Volume (veh/h)	290	1467	531	381	1105	365	289	1092	199	467	1348	373
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	315	1646	543	414	1201	397	314	1187	216	508	1465	405
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	1748	494	385	1630	506	306	1434	445	545	1394	383
Arrive On Green	0.10	0.31	0.31	0.11	0.32	0.32	0.09	0.28	0.28	0.16	0.35	0.35
Sat Flow, veh/h	3563	5611	1585	3456	5106	1585	3456	5106	1585	3456	3984	1094
Grp Volume(v), veh/h	315	1646	543	414	1201	397	314	1187	216	508	1250	620
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1702	1585	1728	1702	1585	1728	1702	1674
Q Serve(g_s), s	11.3	37.2	40.5	14.5	27.2	29.6	11.5	28.3	14.8	18.9	45.5	45.5
Cycle Q Clear(g_c), s	11.3	37.2	40.5	14.5	27.2	29.6	11.5	28.3	14.8	18.9	45.5	45.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	370	1748	494	385	1630	506	306	1434	445	545	1191	586
V/C Ratio(X)	0.85	0.94	1.10	1.07	0.74	0.78	1.03	0.83	0.49	0.93	1.05	1.06
Avail Cap(c_a), veh/h	414	1748	494	385	1630	506	306	1434	445	545	1191	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	43.6	44.7	57.8	39.4	40.2	59.2	43.8	38.9	54.1	42.3	42.3
Incr Delay (d2), s/veh	14.3	10.7	70.4	67.0	1.8	7.9	58.6	5.6	3.8	23.1	40.0	53.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	18.1	24.8	9.7	11.2	12.1	7.4	12.4	6.0	9.8	25.1	26.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.6	54.3	115.2	124.8	41.2	48.1	117.9	49.4	42.7	77.2	82.3	95.8
LnGrp LOS	E	D	F	F	D	D	F	D	D	E	F	F
Approach Vol, veh/h		2504			2012			1717			2378	
Approach Delay, s/veh		69.7			59.8			61.1			84.7	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	50.0	19.0	45.0	25.0	41.0	18.0	46.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	45.5	14.5	40.5	20.5	36.5	15.1	39.9
Max Q Clear Time (g_c+I1), s	13.5	47.5	16.5	42.5	20.9	30.3	13.3	31.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.0	0.2	5.3

Intersection Summary	
HCM 6th Ctrl Delay	69.8
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1085	132	0	1245	436	0	0	91	546	96	804
Future Volume (vph)	0	1085	132	0	1245	436	0	0	91	546	96	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor		0.86			0.91	1.00			1.00	0.97	0.91	0.91
Frt		0.98			1.00	0.85			0.86	1.00	0.88	0.85
Flt Protected		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (prot)		6304			5085	1583			1611	3433	2979	1441
Flt Permitted		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (perm)		6304			5085	1583			1611	3433	2979	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1179	143	0	1353	474	0	0	99	593	104	874
RTOR Reduction (vph)	0	33	0	0	0	332	0	0	71	0	1	11
Lane Group Flow (vph)	0	1289	0	0	1353	142	0	0	28	593	540	426
Turn Type		NA			NA	Perm			Perm	Prot	NA	Perm
Protected Phases		4			8					1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)		19.5			19.5	19.5			18.7	13.3	36.5	36.5
Effective Green, g (s)		19.5			19.5	19.5			18.7	13.3	36.5	36.5
Actuated g/C Ratio		0.30			0.30	0.30			0.29	0.20	0.56	0.56
Clearance Time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1891			1525	474			463	702	1672	809
v/s Ratio Prot		0.20			c0.27					c0.17	0.18	
v/s Ratio Perm						0.09			0.02			c0.30
v/c Ratio		0.68			0.89	0.30			0.06	0.84	0.32	0.53
Uniform Delay, d1		20.0			21.7	17.5			16.8	24.9	7.6	8.9
Progression Factor		1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0			6.6	0.4			0.3	9.2	0.5	2.4
Delay (s)		21.0			28.3	17.9			17.0	34.0	8.1	11.3
Level of Service		C			C	B			B	C	A	B
Approach Delay (s)		21.0			25.6			17.0			18.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1454	0	0	1358	940	459	0	364	0	0	0
Future Volume (vph)	0	1454	0	0	1358	940	459	0	364	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5	4.5		4.5			
Lane Util. Factor		0.86			0.95	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		6408			3539	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		6408			3539	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1580	0	0	1476	1022	499	0	396	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	468	0	0	25	0	0	0
Lane Group Flow (vph)	0	1580	0	0	1476	554	499	0	371	0	0	0
Turn Type		NA			NA	Perm	Perm		Perm			
Protected Phases		4			8							
Permitted Phases						8	2		2			
Actuated Green, G (s)		32.5			32.5	32.5	18.5		18.5			
Effective Green, g (s)		32.5			32.5	32.5	18.5		18.5			
Actuated g/C Ratio		0.54			0.54	0.54	0.31		0.31			
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		3471			1916	857	1058		859			
v/s Ratio Prot		0.25			c0.42							
v/s Ratio Perm						0.35	c0.15		0.13			
v/c Ratio		0.46			0.77	0.65	0.47		0.43			
Uniform Delay, d1		8.4			10.8	9.7	16.8		16.6			
Progression Factor		1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			2.0	1.7	1.5		1.6			
Delay (s)		8.5			12.8	11.4	18.3		18.1			
Level of Service		A			B	B	B		B			
Approach Delay (s)		8.5			12.2			18.2			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1322	173	104	1224	198	240	555	162	296	621	168
Future Volume (veh/h)	107	1322	173	104	1224	198	240	555	162	296	621	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	1437	188	113	1330	215	261	603	176	322	675	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	2085	273	154	1467	237	212	822	367	256	911	406
Arrive On Green	0.07	0.46	0.46	0.33	0.33	0.33	0.12	0.23	0.23	0.14	0.26	0.26
Sat Flow, veh/h	1781	4569	597	310	4430	716	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	116	1070	555	113	1022	523	261	603	176	322	675	183
Grp Sat Flow(s),veh/h/ln	1781	1702	1763	310	1702	1741	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.2	20.0	20.0	16.5	23.0	23.0	9.5	12.6	7.7	11.5	14.0	7.8
Cycle Q Clear(g_c), s	5.2	20.0	20.0	26.5	23.0	23.0	9.5	12.6	7.7	11.5	14.0	7.8
Prop In Lane	1.00		0.34	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	1553	804	154	1128	577	212	822	367	256	911	406
V/C Ratio(X)	0.95	0.69	0.69	0.73	0.91	0.91	1.23	0.73	0.48	1.26	0.74	0.45
Avail Cap(c_a), veh/h	122	1553	804	154	1128	577	212	822	367	256	911	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	17.3	17.3	35.3	25.6	25.6	35.2	28.5	26.6	34.3	27.3	25.0
Incr Delay (d2), s/veh	64.9	1.3	2.5	16.4	10.5	18.1	139.2	5.8	4.5	143.6	5.4	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	7.6	8.2	2.9	10.6	12.0	12.2	5.9	3.3	15.1	6.5	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.0	18.6	19.8	51.8	36.1	43.6	174.4	34.2	31.0	177.8	32.7	28.6
LnGrp LOS	F	B	B	D	D	D	F	C	C	F	C	C
Approach Vol, veh/h		1741			1658			1040			1180	
Approach Delay, s/veh		24.5			39.6			68.9			71.7	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	23.0		41.0	14.0	25.0	10.0	31.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	18.5		36.5	9.5	20.5	5.5	26.5
Max Q Clear Time (g_c+I1), s	13.5	14.6		22.0	11.5	16.0	7.2	28.5
Green Ext Time (p_c), s	0.0	1.8		9.7	0.0	2.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1253	294	217	649	0	504	0	467	2	0	2
Future Volume (veh/h)	0	1253	294	217	649	0	504	0	467	2	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1362	320	236	705	0	548	0	508	2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1368	610	259	1795	0	588	0	1284	154	17	117
Arrive On Green	0.00	0.38	0.38	0.08	0.50	0.00	0.17	0.00	0.41	0.19	0.00	0.19
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	3563	0	3170	512	88	600
Grp Volume(v), veh/h	0	1362	320	236	705	0	548	0	508	4	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	0	1585	1200	0	0
Q Serve(g_s), s	0.0	38.2	15.6	6.8	12.3	0.0	15.2	0.0	11.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	38.2	15.6	6.8	12.3	0.0	15.2	0.0	11.4	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.50		0.50
Lane Grp Cap(c), veh/h	2	1368	610	259	1795	0	588	0	1284	288	0	0
V/C Ratio(X)	0.00	1.00	0.52	0.91	0.39	0.00	0.93	0.00	0.40	0.01	0.00	0.00
Avail Cap(c_a), veh/h	89	1368	610	259	1795	0	588	0	1284	288	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	30.7	23.7	45.9	15.3	0.0	41.2	0.0	21.1	32.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	23.2	0.8	33.3	0.1	0.0	21.9	0.0	0.9	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.3	5.9	4.1	4.9	0.0	8.4	0.0	4.4	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	53.9	24.5	79.2	15.4	0.0	63.1	0.0	22.0	32.6	0.0	0.0
LnGrp LOS	A	D	C	E	B	A	E	A	C	C	A	A
Approach Vol, veh/h		1682			941			1056			4	
Approach Delay, s/veh		48.3			31.4			43.3			32.6	
Approach LOS		D			C			D			C	

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		45.0	12.0	43.0	21.0	24.0	0.0	55.0
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		40.5	7.5	38.5	16.5	19.5	5.0	41.0
Max Q Clear Time (g_c+I1), s		13.4	8.8	40.2	17.2	2.2	0.0	14.3
Green Ext Time (p_c), s		2.2	0.0	0.0	0.0	0.0	0.0	5.6

Intersection Summary	
HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	1110	43	60	868	79	230	702	128	180	243	117
Future Volume (veh/h)	109	1110	43	60	868	79	230	702	128	180	243	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	1207	47	65	943	86	250	763	139	196	264	127
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	1321	589	83	1110	101	460	917	409	277	366	171
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.26	0.26	0.26	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3293	300	1781	3554	1585	1781	2351	1099
Grp Volume(v), veh/h	118	1207	47	65	509	520	250	763	139	196	198	193
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1816	1781	1777	1585	1781	1777	1673
Q Serve(g_s), s	7.0	34.7	2.1	3.9	28.5	28.6	13.0	21.8	7.7	11.2	11.3	11.8
Cycle Q Clear(g_c), s	7.0	34.7	2.1	3.9	28.5	28.6	13.0	21.8	7.7	11.2	11.3	11.8
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	145	1321	589	83	599	612	460	917	409	277	277	260
V/C Ratio(X)	0.81	0.91	0.08	0.78	0.85	0.85	0.54	0.83	0.34	0.71	0.71	0.74
Avail Cap(c_a), veh/h	154	1374	613	88	621	635	460	917	409	622	621	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	32.1	21.8	50.6	33.0	33.0	34.4	37.6	32.4	43.0	43.1	43.3
Incr Delay (d2), s/veh	26.1	9.4	0.1	33.6	10.5	10.3	4.6	8.7	2.2	3.3	3.4	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	16.0	0.8	2.5	13.6	13.9	6.1	10.4	3.1	5.1	5.2	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.6	41.5	21.9	84.2	43.6	43.4	38.9	46.3	34.6	46.3	46.5	47.4
LnGrp LOS	E	D	C	F	D	D	D	D	C	D	D	D
Approach Vol, veh/h		1372			1094			1152			587	
Approach Delay, s/veh		43.7			45.9			43.3			46.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.2	9.5	44.4		21.2	13.2	40.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		27.7	5.3	41.5		37.5	9.3	37.5				
Max Q Clear Time (g_c+I1), s		23.8	5.9	36.7		13.8	9.0	30.6				
Green Ext Time (p_c), s		2.2	0.0	3.2		2.9	0.0	3.5				

Intersection Summary	
HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	1685	112	79	797	113	107	670	127	113	455	86
Future Volume (veh/h)	114	1685	112	79	797	113	107	670	127	113	455	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	1832	122	86	866	123	116	728	138	123	495	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1917	127	110	1651	233	299	1124	213	202	1127	211
Arrive On Green	0.09	0.39	0.39	0.06	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1781	4891	325	1781	4520	639	828	2981	565	639	2988	559
Grp Volume(v), veh/h	124	1274	680	86	651	338	116	434	432	123	293	295
Grp Sat Flow(s),veh/h/ln	1781	1702	1812	1781	1702	1755	828	1777	1769	639	1777	1770
Q Serve(g_s), s	5.4	29.0	29.2	3.8	12.0	12.1	9.7	16.1	16.1	14.0	9.8	9.9
Cycle Q Clear(g_c), s	5.4	29.0	29.2	3.8	12.0	12.1	19.7	16.1	16.1	30.1	9.8	9.9
Prop In Lane	1.00		0.18	1.00		0.36	1.00		0.32	1.00		0.32
Lane Grp Cap(c), veh/h	158	1334	710	110	1244	641	299	670	667	202	670	667
V/C Ratio(X)	0.79	0.95	0.96	0.78	0.52	0.53	0.39	0.65	0.65	0.61	0.44	0.44
Avail Cap(c_a), veh/h	266	1335	710	114	1244	641	299	670	667	202	670	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	23.6	23.6	36.9	19.9	19.9	25.9	20.5	20.5	33.5	18.6	18.6
Incr Delay (d2), s/veh	8.4	15.1	23.9	27.9	0.4	0.8	3.8	4.8	4.8	12.8	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	13.1	15.8	2.4	4.4	4.6	2.2	7.2	7.1	3.1	4.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	38.7	47.5	64.9	20.3	20.7	29.7	25.3	25.3	46.4	20.6	20.7
LnGrp LOS	D	D	D	E	C	C	C	C	C	D	C	C
Approach Vol, veh/h		2078			1075			982			711	
Approach Delay, s/veh		41.9			24.0			25.8			25.1	
Approach LOS		D			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.6	9.4	35.8		34.6	11.6	33.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.1	5.1	31.3		30.1	11.9	24.5				
Max Q Clear Time (g_c+I1), s		21.7	5.8	31.2		32.1	7.4	14.1				
Green Ext Time (p_c), s		4.0	0.0	0.1		0.0	0.1	4.4				

Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	1595	106	114	819	116	143	652	86	190	601	128
Future Volume (veh/h)	205	1595	106	114	819	116	143	652	86	190	601	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	223	1734	115	124	890	126	155	709	93	207	653	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1810	120	148	1392	196	180	770	343	232	873	389
Arrive On Green	0.15	0.37	0.37	0.08	0.31	0.31	0.10	0.22	0.22	0.13	0.25	0.25
Sat Flow, veh/h	1781	4892	324	1781	4522	637	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	223	1206	643	124	669	347	155	709	93	207	653	139
Grp Sat Flow(s),veh/h/ln	1781	1702	1812	1781	1702	1756	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.0	31.1	31.2	6.2	15.2	15.3	7.7	17.6	4.4	10.3	15.3	6.5
Cycle Q Clear(g_c), s	11.0	31.1	31.2	6.2	15.2	15.3	7.7	17.6	4.4	10.3	15.3	6.5
Prop In Lane	1.00		0.18	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	1259	670	148	1048	540	180	770	343	232	873	389
V/C Ratio(X)	0.86	0.96	0.96	0.84	0.64	0.64	0.86	0.92	0.27	0.89	0.75	0.36
Avail Cap(c_a), veh/h	303	1260	671	148	1048	540	180	770	343	232	873	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	27.7	27.7	40.6	26.8	26.9	39.8	34.5	29.3	38.5	31.4	28.1
Incr Delay (d2), s/veh	19.2	16.2	25.1	31.9	1.3	2.6	31.9	18.0	1.9	32.5	5.8	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	14.7	17.3	4.0	6.1	6.5	4.9	9.3	1.8	6.5	7.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	43.9	52.8	72.5	28.1	29.5	71.7	52.5	31.3	71.0	37.2	30.6
LnGrp LOS	E	D	D	E	C	C	E	D	C	E	D	C
Approach Vol, veh/h		2072			1140			957			999	
Approach Delay, s/veh		48.0			33.4			53.6			43.3	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	24.0	12.0	37.8	13.6	26.6	17.6	32.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.7	19.5	7.5	33.3	9.1	22.1	15.3	25.5
Max Q Clear Time (g_c+I1), s	12.3	19.6	8.2	33.2	9.7	17.3	13.0	17.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	2.1	0.1	4.0

Intersection Summary	
HCM 6th Ctrl Delay	44.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	296	0	521	337	795	0	0	1164	153
Future Volume (veh/h)	0	0	0	296	0	521	337	795	0	0	1164	153
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				322	0	566	366	864	0	0	1265	166
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1178	0	524	452	1886	0	0	1511	198
Arrive On Green				0.33	0.00	0.33	0.13	0.53	0.00	0.00	0.33	0.33
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	4736	599
Grp Volume(v), veh/h				322	0	566	366	864	0	0	943	488
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1762
Q Serve(g_s), s				4.3	0.0	21.5	6.7	9.8	0.0	0.0	16.7	16.7
Cycle Q Clear(g_c), s				4.3	0.0	21.5	6.7	9.8	0.0	0.0	16.7	16.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.34
Lane Grp Cap(c), veh/h				1178	0	524	452	1886	0	0	1126	583
V/C Ratio(X)				0.27	0.00	1.08	0.81	0.46	0.00	0.00	0.84	0.84
Avail Cap(c_a), veh/h				1178	0	524	452	1886	0	0	1126	583
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.0	0.0	21.8	27.5	9.5	0.0	0.0	20.1	20.1
Incr Delay (d2), s/veh				0.1	0.0	62.5	10.6	0.8	0.0	0.0	7.5	13.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	15.8	3.3	3.4	0.0	0.0	7.2	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.1	0.0	84.2	38.1	10.3	0.0	0.0	27.6	33.6
LnGrp LOS				B	A	F	D	B	A	A	C	C
Approach Vol, veh/h					888			1230			1431	
Approach Delay, s/veh					59.5			18.5			29.6	
Approach LOS					E			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		39.0			13.0	26.0		26.0				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		34.5			8.5	21.5		21.5				
Max Q Clear Time (g_c+I1), s		11.8			8.7	18.7		23.5				
Green Ext Time (p_c), s		6.5			0.0	2.2		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	0	631	0	0	0	0	995	353	439	1018	0
Future Volume (veh/h)	214	0	631	0	0	0	0	995	353	439	1018	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	155	0	769				0	1082	384	477	1107	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	458	0	815				0	1375	613	563	2183	0
Arrive On Green	0.26	0.00	0.26				0.00	0.39	0.39	0.16	0.61	0.00
Sat Flow, veh/h	1781	0	3170				0	3647	1585	3456	3647	0
Grp Volume(v), veh/h	155	0	769				0	1082	384	477	1107	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1728	1777	0
Q Serve(g_s), s	5.0	0.0	16.7				0.0	18.8	13.7	9.4	12.2	0.0
Cycle Q Clear(g_c), s	5.0	0.0	16.7				0.0	18.8	13.7	9.4	12.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	458	0	815				0	1375	613	563	2183	0
V/C Ratio(X)	0.34	0.00	0.94				0.00	0.79	0.63	0.85	0.51	0.00
Avail Cap(c_a), veh/h	458	0	815				0	1375	613	568	2183	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.2	0.0	25.5				0.0	18.9	17.4	28.4	7.6	0.0
Incr Delay (d2), s/veh	0.4	0.0	19.1				0.0	4.6	4.8	11.4	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	7.8				0.0	7.9	5.4	4.6	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	44.6				0.0	23.5	22.1	39.8	8.4	0.0
LnGrp LOS	C	A	D				A	C	C	D	A	A
Approach Vol, veh/h		924						1466			1584	
Approach Delay, s/veh		40.8						23.2			17.9	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.9	31.6		22.5		47.5
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	11.5	27.0		18.0		43.0
Max Q Clear Time (g_c+I1), s	11.4	20.8		18.7		14.2
Green Ext Time (p_c), s	0.0	4.2		0.0		9.6

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	16	57	136	16	181	28	1412	279	91	854	15
Future Volume (veh/h)	17	16	57	136	16	181	28	1412	279	91	854	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	17	62	148	17	197	30	1535	303	99	928	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	69	158	249	20	286	435	2085	401	172	2507	43
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	102	347	795	870	100	1442	594	2973	572	252	3574	62
Grp Volume(v), veh/h	97	0	0	165	0	197	30	901	937	99	461	483
Grp Sat Flow(s),veh/h/ln	1244	0	0	970	0	1442	594	1777	1767	252	1777	1859
Q Serve(g_s), s	0.3	0.0	0.0	4.1	0.0	11.4	1.9	27.6	30.3	32.7	9.4	9.4
Cycle Q Clear(g_c), s	11.7	0.0	0.0	15.8	0.0	11.4	11.3	27.6	30.3	63.0	9.4	9.4
Prop In Lane	0.19		0.64	0.90		1.00	1.00		0.32	1.00		0.03
Lane Grp Cap(c), veh/h	294	0	0	268	0	286	435	1246	1240	172	1246	1304
V/C Ratio(X)	0.33	0.00	0.00	0.61	0.00	0.69	0.07	0.72	0.76	0.58	0.37	0.37
Avail Cap(c_a), veh/h	297	0	0	271	0	289	435	1246	1240	172	1246	1304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	0.0	36.1	0.0	33.4	7.7	8.1	8.5	29.7	5.4	5.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	4.0	0.0	6.6	0.3	3.7	4.3	13.2	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	3.8	0.0	4.4	0.3	9.6	10.6	2.7	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	0.0	0.0	40.2	0.0	40.1	8.0	11.8	12.8	43.0	6.3	6.2
LnGrp LOS	C	A	A	D	A	D	A	B	B	D	A	A
Approach Vol, veh/h		97			362			1868			1043	
Approach Delay, s/veh		31.4			40.1			12.3			9.7	
Approach LOS		C			D			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	67.5	22.3	67.5	22.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	63.0	18.0	63.0	18.0
Max Q Clear Time (g_c+I1), s	32.3	13.7	65.0	17.8
Green Ext Time (p_c), s	19.6	0.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (veh/h)	306	294	0	1158	266	2	1032	242	0	0
Future Volume (veh/h)	306	294	0	1158	266	2	1032	242	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	333	320	0	1259	289	2	1122	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	0	2	2	2	2	2		
Cap, veh/h	475	423	0	2188	502	83	1835			
Arrive On Green	0.27	0.27	0.00	0.53	0.53	0.53	0.53	0.00		
Sat Flow, veh/h	1781	1585	0	4319	952	1	3482	1585		
Grp Volume(v), veh/h	333	320	0	1033	515	602	522	0		
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1702	1699	1866	1617	1585		
Q Serve(g_s), s	7.4	8.1	0.0	9.0	9.0	0.0	9.8	0.0		
Cycle Q Clear(g_c), s	7.4	8.1	0.0	9.0	9.0	9.8	9.8	0.0		
Prop In Lane	1.00	1.00	0.00		0.56	0.00		1.00		
Lane Grp Cap(c), veh/h	475	423	0	1794	895	1066	852			
V/C Ratio(X)	0.70	0.76	0.00	0.58	0.58	0.56	0.61			
Avail Cap(c_a), veh/h	735	654	0	1794	895	1066	852			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	14.4	14.7	0.0	7.0	7.0	7.2	7.2	0.0		
Incr Delay (d2), s/veh	1.9	2.8	0.0	1.4	2.7	2.2	3.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.8	2.8	0.0	2.4	2.8	3.2	3.0	0.0		
Unsig. Movement Delay, s/veh										
LnGrp Delay(d),s/veh	16.3	17.5	0.0	8.4	9.7	9.4	10.5	0.0		
LnGrp LOS	B	B	A	A	A	A	B			
Approach Vol, veh/h	653			1548			1124	A		
Approach Delay, s/veh	16.9			8.8			9.9			
Approach LOS	B			A			A			

Timer - Assigned Phs		2		4		6				
Phs Duration (G+Y+Rc), s		27.5		16.1		27.5				
Change Period (Y+Rc), s		4.5		4.5		4.5				
Max Green Setting (Gmax), s		23.0		18.0		23.0				
Max Q Clear Time (g_c+I1), s		11.0		10.1		11.8				
Green Ext Time (p_c), s		7.9		1.5		5.6				

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1610	163	116	914	83	130	733	178	107	644	89
Future Volume (veh/h)	80	1610	163	116	914	83	130	733	178	107	644	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	1750	177	126	993	90	141	797	193	116	700	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	1809	182	151	1933	175	212	1288	575	191	1136	157
Arrive On Green	0.06	0.38	0.38	0.09	0.41	0.41	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1781	4714	475	1781	4766	431	682	3554	1585	569	3135	434
Grp Volume(v), veh/h	87	1262	665	126	709	374	141	797	193	116	397	400
Grp Sat Flow(s),veh/h/ln	1781	1702	1785	1781	1702	1793	682	1777	1585	569	1777	1792
Q Serve(g_s), s	3.8	29.0	29.3	5.6	12.5	12.5	14.3	14.7	7.1	14.3	14.7	14.7
Cycle Q Clear(g_c), s	3.8	29.0	29.3	5.6	12.5	12.5	29.0	14.7	7.1	29.0	14.7	14.7
Prop In Lane	1.00		0.27	1.00		0.24	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	112	1306	685	151	1381	727	212	1288	575	191	644	650
V/C Ratio(X)	0.77	0.97	0.97	0.83	0.51	0.51	0.66	0.62	0.34	0.61	0.62	0.62
Avail Cap(c_a), veh/h	207	1306	685	151	1381	727	212	1288	575	191	644	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	24.1	24.2	36.0	17.8	17.9	33.8	21.0	18.5	33.8	20.9	20.9
Incr Delay (d2), s/veh	10.8	17.4	27.2	30.8	0.3	0.6	15.3	2.2	1.6	13.5	4.4	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	13.8	16.4	3.6	4.6	4.9	3.6	6.2	2.7	3.0	6.5	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	41.5	51.4	66.9	18.2	18.5	49.1	23.2	20.1	47.2	25.3	25.3
LnGrp LOS	D	D	D	E	B	B	D	C	C	D	C	C
Approach Vol, veh/h		2014			1209			1131			913	
Approach Delay, s/veh		45.0			23.3			25.9			28.1	
Approach LOS		D			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		33.5	11.3	35.2		33.5	9.5	37.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		29.0	6.8	30.7		29.0	9.3	28.2				
Max Q Clear Time (g_c+I1), s		31.0	7.6	31.3		31.0	5.8	14.5				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	5.9				

Intersection Summary	
HCM 6th Ctrl Delay	33.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	1732	117	169	810	149	88	513	319	92	578	138
Future Volume (veh/h)	93	1732	117	169	810	149	88	513	319	92	578	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	1883	127	184	880	162	96	558	347	100	628	150
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	2054	138	221	2045	375	182	1012	451	184	1012	451
Arrive On Green	0.07	0.42	0.42	0.12	0.47	0.47	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	4887	329	1781	4337	794	694	3554	1585	616	3554	1585
Grp Volume(v), veh/h	101	1310	700	184	690	352	96	558	347	100	628	150
Grp Sat Flow(s),veh/h/ln	1781	1702	1811	1781	1702	1727	694	1777	1585	616	1777	1585
Q Serve(g_s), s	4.4	28.7	28.9	8.0	10.6	10.7	10.4	10.5	15.8	12.0	12.1	5.9
Cycle Q Clear(g_c), s	4.4	28.7	28.9	8.0	10.6	10.7	22.5	10.5	15.8	22.5	12.1	5.9
Prop In Lane	1.00		0.18	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	1430	761	221	1605	815	182	1012	451	184	1012	451
V/C Ratio(X)	0.78	0.92	0.92	0.83	0.43	0.43	0.53	0.55	0.77	0.54	0.62	0.33
Avail Cap(c_a), veh/h	228	1443	768	237	1605	815	182	1012	451	184	1012	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	21.6	21.7	33.8	13.8	13.9	34.6	24.0	25.9	33.9	24.6	22.3
Incr Delay (d2), s/veh	9.5	9.4	16.2	20.5	0.2	0.4	10.5	2.2	11.9	11.0	2.9	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	12.1	14.4	4.6	3.7	3.8	2.3	4.6	7.1	2.4	5.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	31.0	37.8	54.3	14.0	14.2	45.1	26.2	37.8	44.9	27.4	24.3
LnGrp LOS	D	C	D	D	B	B	D	C	D	D	C	C
Approach Vol, veh/h		2111			1226			1001			878	
Approach Delay, s/veh		33.9			20.1			32.0			28.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.0	14.3	37.7		27.0	10.3	41.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.5	10.5	33.5		22.5	10.1	33.9				
Max Q Clear Time (g_c+I1), s		24.5	10.0	30.9		24.5	6.4	12.7				
Green Ext Time (p_c), s		0.0	0.0	2.3		0.0	0.1	7.1				

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	1729	87	83	1096	190	61	473	37	223	676	246
Future Volume (veh/h)	242	1729	87	83	1096	190	61	473	37	223	676	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	263	1879	95	90	1191	207	66	514	40	242	735	267
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	297	1989	100	115	1300	226	220	765	59	345	1030	460
Arrive On Green	0.17	0.40	0.40	0.06	0.30	0.30	0.05	0.23	0.23	0.11	0.29	0.29
Sat Flow, veh/h	1781	4978	251	1781	4377	761	1781	3341	259	1781	3554	1585
Grp Volume(v), veh/h	263	1284	690	90	926	472	66	273	281	242	735	267
Grp Sat Flow(s),veh/h/ln	1781	1702	1825	1781	1702	1733	1781	1777	1824	1781	1777	1585
Q Serve(g_s), s	12.9	32.6	32.7	4.5	23.5	23.5	2.5	12.5	12.6	9.0	16.6	12.9
Cycle Q Clear(g_c), s	12.9	32.6	32.7	4.5	23.5	23.5	2.5	12.5	12.6	9.0	16.6	12.9
Prop In Lane	1.00		0.14	1.00		0.44	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	297	1360	729	115	1011	515	220	407	417	345	1030	460
V/C Ratio(X)	0.88	0.94	0.95	0.78	0.92	0.92	0.30	0.67	0.67	0.70	0.71	0.58
Avail Cap(c_a), veh/h	308	1365	732	121	1011	515	241	407	417	345	1030	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	25.9	26.0	41.3	30.4	30.4	25.3	31.5	31.5	23.1	28.5	27.1
Incr Delay (d2), s/veh	24.3	13.2	21.2	26.6	12.6	21.2	0.8	8.5	8.4	6.3	4.2	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	14.7	17.4	2.8	10.9	12.4	1.1	6.2	6.4	4.3	7.5	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	39.1	47.1	67.9	43.0	51.6	26.1	40.0	39.9	29.3	32.7	32.4
LnGrp LOS	E	D	D	E	D	D	C	D	D	C	C	C
Approach Vol, veh/h		2237			1488			620			1244	
Approach Delay, s/veh		44.1			47.3			38.5			32.0	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	25.0	10.3	40.3	8.5	30.5	19.5	31.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	20.5	6.1	35.9	5.1	24.9	15.5	26.5
Max Q Clear Time (g_c+I1), s	11.0	14.6	6.5	34.7	4.5	18.6	14.9	25.5
Green Ext Time (p_c), s	0.0	1.7	0.0	1.1	0.0	3.2	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	248	1462	21	312	1387	50	164	828	315	199	955	230
Future Volume (veh/h)	248	1462	21	312	1387	50	164	828	315	199	955	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	270	1589	23	339	1508	54	178	900	342	216	1038	250
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	1419	21	295	1467	53	281	839	317	239	1128	503
Arrive On Green	0.15	0.27	0.27	0.17	0.29	0.29	0.12	0.33	0.33	0.11	0.32	0.32
Sat Flow, veh/h	1781	5186	75	1781	5061	181	1781	2522	954	1781	3554	1585
Grp Volume(v), veh/h	270	1043	569	339	1014	548	178	633	609	216	1038	250
Grp Sat Flow(s),veh/h/ln	1781	1702	1857	1781	1702	1838	1781	1777	1699	1781	1777	1585
Q Serve(g_s), s	22.1	40.5	40.5	24.5	42.9	42.9	9.2	49.2	49.2	13.6	41.7	18.9
Cycle Q Clear(g_c), s	22.1	40.5	40.5	24.5	42.9	42.9	9.2	49.2	49.2	13.6	41.7	18.9
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	266	932	508	295	987	533	281	591	565	239	1128	503
V/C Ratio(X)	1.01	1.12	1.12	1.15	1.03	1.03	0.63	1.07	1.08	0.91	0.92	0.50
Avail Cap(c_a), veh/h	266	932	508	295	987	533	281	591	565	265	1177	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	53.7	53.7	61.7	52.5	52.5	33.1	49.4	49.4	44.4	48.7	40.9
Incr Delay (d2), s/veh	59.1	68.1	77.0	99.1	36.0	46.3	10.5	57.5	60.8	30.0	11.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	25.8	29.4	19.1	22.9	26.3	4.7	30.8	29.9	9.9	19.9	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.0	121.8	130.8	160.9	88.5	98.9	43.5	106.9	110.2	74.4	60.1	41.7
LnGrp LOS	F	F	F	F	F	F	D	F	F	E	E	D
Approach Vol, veh/h		1882			1901			1420			1504	
Approach Delay, s/veh		124.6			104.4			100.4			59.1	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	53.7	29.0	45.0	22.5	51.5	26.6	47.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	49.0	24.5	40.5	18.0	49.0	22.1	42.9
Max Q Clear Time (g_c+I1), s	15.6	51.2	26.5	42.5	11.2	43.7	24.1	44.9
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.2	3.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	99.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	1275	157	267	1084	347	327	1257	305	287	806	208
Future Volume (veh/h)	226	1275	157	267	1084	347	327	1257	305	287	806	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	246	1386	171	290	1178	377	355	1366	332	312	876	226
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1233	152	248	1028	459	351	1274	309	274	949	423
Arrive On Green	0.12	0.27	0.27	0.14	0.29	0.29	0.20	0.31	0.31	0.15	0.27	0.27
Sat Flow, veh/h	1781	4604	568	1781	3554	1585	1781	4101	995	1781	3554	1585
Grp Volume(v), veh/h	246	1025	532	290	1178	377	355	1133	565	312	876	226
Grp Sat Flow(s),veh/h/ln	1781	1702	1768	1781	1777	1585	1781	1702	1691	1781	1777	1585
Q Serve(g_s), s	16.5	37.5	37.5	19.5	40.5	31.1	27.6	43.5	43.5	21.5	33.6	17.1
Cycle Q Clear(g_c), s	16.5	37.5	37.5	19.5	40.5	31.1	27.6	43.5	43.5	21.5	33.6	17.1
Prop In Lane	1.00		0.32	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	210	912	474	248	1028	459	351	1058	526	274	949	423
V/C Ratio(X)	1.17	1.12	1.12	1.17	1.15	0.82	1.01	1.07	1.07	1.14	0.92	0.53
Avail Cap(c_a), veh/h	210	912	474	248	1028	459	351	1058	526	274	949	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	51.3	51.3	60.3	49.7	46.4	56.2	48.3	48.3	59.3	49.9	43.8
Incr Delay (d2), s/veh	116.2	70.0	79.9	110.5	77.3	11.5	50.8	49.0	60.7	97.8	15.6	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	24.5	26.8	16.3	28.6	13.5	17.1	25.2	26.7	17.0	16.7	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	178.0	121.2	131.1	170.8	127.1	57.8	107.0	97.2	109.0	157.0	65.5	48.6
LnGrp LOS	F	F	F	F	F	E	F	F	F	F	E	D
Approach Vol, veh/h		1803			1845			2053			1414	
Approach Delay, s/veh		131.9			119.8			102.1			83.0	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	48.0	24.0	42.0	32.1	41.9	21.0	45.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	21.5	43.5	19.5	37.5	27.6	37.4	16.5	40.5
Max Q Clear Time (g_c+I1), s	23.5	45.5	21.5	39.5	29.6	35.6	18.5	42.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	110.5
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	1377	296	255	816	82	365	1563	432	118	969	124
Future Volume (veh/h)	321	1377	296	255	816	82	365	1563	432	118	969	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	349	1497	322	277	887	89	397	1699	470	128	1053	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	1503	467	303	1224	122	474	1725	535	143	1635	208
Arrive On Green	0.12	0.29	0.29	0.09	0.26	0.26	0.14	0.34	0.34	0.08	0.28	0.28
Sat Flow, veh/h	3456	5106	1585	3456	4718	472	3456	5106	1585	1781	5823	740
Grp Volume(v), veh/h	349	1497	322	277	639	337	397	1699	470	128	871	317
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1785	1728	1702	1585	1781	1609	1737
Q Serve(g_s), s	8.9	26.3	16.2	7.2	15.4	15.5	10.1	29.7	25.1	6.4	14.3	14.4
Cycle Q Clear(g_c), s	8.9	26.3	16.2	7.2	15.4	15.5	10.1	29.7	25.1	6.4	14.3	14.4
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	424	1503	467	303	883	463	474	1725	535	143	1355	488
V/C Ratio(X)	0.82	1.00	0.69	0.91	0.72	0.73	0.84	0.99	0.88	0.90	0.64	0.65
Avail Cap(c_a), veh/h	468	1503	467	303	883	463	526	1725	535	143	1355	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	31.7	28.1	40.7	30.4	30.4	37.9	29.6	28.1	41.0	28.4	28.5
Incr Delay (d2), s/veh	10.4	22.1	4.3	30.3	3.0	5.7	10.6	18.4	18.2	46.5	2.4	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	13.2	6.3	4.2	6.3	7.0	4.7	14.0	11.5	4.5	5.4	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	53.8	32.4	71.1	33.3	36.1	48.4	48.0	46.2	87.5	30.8	35.1
LnGrp LOS	D	D	C	E	C	D	D	D	D	F	C	D
Approach Vol, veh/h		2168			1253			2566			1316	
Approach Delay, s/veh		49.9			42.4			47.7			37.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	34.9	12.4	31.0	16.8	29.8	15.5	27.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.2	30.4	7.9	26.5	13.7	23.9	12.2	22.2
Max Q Clear Time (g_c+I1), s	8.4	31.7	9.2	28.3	12.1	16.4	10.9	17.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.3	4.1	0.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	692	1476	203	284	556	313	50	1711	236	298	1833	412
Future Volume (veh/h)	692	1476	203	284	556	313	50	1711	236	298	1833	412
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	752	1604	221	309	604	340	54	1860	257	324	1992	448
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	887	1165	160	415	613	190	783	1458	359	956	1413	772
Arrive On Green	0.26	0.26	0.26	0.12	0.12	0.12	0.23	0.23	0.23	0.28	0.28	0.28
Sat Flow, veh/h	3456	4539	624	3456	5106	1585	3456	6434	1585	3456	5106	2790
Grp Volume(v), veh/h	752	1202	623	309	604	340	54	1860	257	324	1992	448
Grp Sat Flow(s),veh/h/ln	1728	1702	1758	1728	1702	1585	1728	1609	1585	1728	1702	1395
Q Serve(g_s), s	31.0	38.5	38.5	13.0	17.7	18.0	1.8	34.0	22.4	11.2	41.5	20.8
Cycle Q Clear(g_c), s	31.0	38.5	38.5	13.0	17.7	18.0	1.8	34.0	22.4	11.2	41.5	20.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	887	874	451	415	613	190	783	1458	359	956	1413	772
V/C Ratio(X)	0.85	1.38	1.38	0.75	0.99	1.79	0.07	1.28	0.72	0.34	1.41	0.58
Avail Cap(c_a), veh/h	887	874	451	415	613	190	783	1458	359	956	1413	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	55.8	55.8	63.8	65.9	66.0	45.6	58.0	53.5	43.3	54.3	46.7
Incr Delay (d2), s/veh	7.7	176.3	184.8	7.2	32.6	374.7	0.2	129.4	11.5	1.0	188.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	37.6	39.9	6.1	9.5	27.0	0.8	26.6	9.9	4.9	42.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	232.0	240.5	71.0	98.5	440.7	45.7	187.4	65.1	44.3	243.1	49.9
LnGrp LOS	E	F	F	E	F	F	D	F	E	D	F	D
Approach Vol, veh/h		2577			1253			2171			2764	
Approach Delay, s/veh		184.1			184.6			169.4			188.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.5		43.0		46.0		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		34.0		38.5		41.5		18.0				
Max Q Clear Time (g_c+I1), s		36.0		40.5		43.5		20.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			181.9									
HCM 6th LOS			F									

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	123	652	51	423	589	68	125	1238	435	93	725	162
Future Volume (veh/h)	123	652	51	423	589	68	125	1238	435	93	725	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	709	55	460	640	74	136	1346	473	101	788	176
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	739	329	459	1339	597	183	1278	446	113	1018	227
Arrive On Green	0.09	0.21	0.21	0.26	0.38	0.38	0.05	0.34	0.34	0.06	0.35	0.35
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3736	1304	1781	2886	645
Grp Volume(v), veh/h	134	709	55	460	640	74	136	1226	593	101	485	479
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1636	1781	1777	1754
Q Serve(g_s), s	10.4	27.6	4.0	36.1	19.2	4.3	5.4	47.9	47.9	7.9	34.0	34.0
Cycle Q Clear(g_c), s	10.4	27.6	4.0	36.1	19.2	4.3	5.4	47.9	47.9	7.9	34.0	34.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		0.37
Lane Grp Cap(c), veh/h	159	739	329	459	1339	597	183	1165	560	113	627	619
V/C Ratio(X)	0.85	0.96	0.17	1.00	0.48	0.12	0.74	1.05	1.06	0.89	0.77	0.77
Avail Cap(c_a), veh/h	239	739	329	459	1339	597	200	1165	560	113	627	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.8	54.9	45.5	52.0	33.2	28.5	65.3	46.0	46.1	65.1	40.3	40.3
Incr Delay (d2), s/veh	15.7	24.6	1.1	42.4	1.2	0.4	12.7	41.3	55.0	52.4	6.0	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	14.8	1.7	21.2	8.4	1.7	2.7	26.7	27.8	5.2	15.9	15.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.5	79.5	46.6	94.3	34.4	29.0	78.1	87.3	101.1	117.5	46.3	46.4
LnGrp LOS	E	E	D	F	C	C	E	F	F	F	D	D
Approach Vol, veh/h		898			1174			1955			1065	
Approach Delay, s/veh		77.3			57.5			90.9			53.1	
Approach LOS		E			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	57.2	13.4	52.4	40.6	33.6	11.9	53.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.8	46.4	8.9	47.9	36.1	29.1	8.1	48.7
Max Q Clear Time (g_c+I1), s	12.4	21.2	9.9	49.9	38.1	29.6	7.4	36.0
Green Ext Time (p_c), s	0.2	4.5	0.0	0.0	0.0	0.0	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	72.9
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	220	520	54	260	90	462	926	76	64	1241	31
Future Volume (veh/h)	67	220	520	54	260	90	462	926	76	64	1241	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	239	565	59	283	98	502	1007	83	70	1349	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	299	293	85	330	293	511	2236	997	90	1392	35
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.29	0.63	0.63	0.05	0.39	0.39
Sat Flow, veh/h	179	1617	1585	136	1782	1585	1781	3554	1585	1781	3542	89
Grp Volume(v), veh/h	73	239	565	88	254	98	502	1007	83	70	676	707
Grp Sat Flow(s),veh/h/ln	179	1617	1585	301	1617	1585	1781	1777	1585	1781	1777	1854
Q Serve(g_s), s	3.3	14.1	18.5	4.4	15.2	5.4	28.0	14.7	2.0	3.9	37.3	37.4
Cycle Q Clear(g_c), s	18.5	14.1	18.5	18.5	15.2	5.4	28.0	14.7	2.0	3.9	37.3	37.4
Prop In Lane	1.00		1.00	0.67		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	105	299	293	116	299	293	511	2236	997	90	698	729
V/C Ratio(X)	0.69	0.80	1.93	0.76	0.85	0.33	0.98	0.45	0.08	0.77	0.97	0.97
Avail Cap(c_a), veh/h	105	299	293	116	299	293	511	2236	997	169	698	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	39.0	40.8	45.3	39.4	35.4	35.4	9.6	7.3	46.9	29.7	29.8
Incr Delay (d2), s/veh	18.0	14.2	429.4	24.7	20.1	0.7	35.0	0.7	0.2	13.1	27.1	26.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.7	42.1	3.0	7.6	2.1	16.5	5.1	0.7	2.0	20.0	20.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.3	53.1	470.2	70.0	59.5	36.1	70.4	10.2	7.4	60.0	56.9	56.5
LnGrp LOS	E	D	F	E	E	D	E	B	A	E	E	E
Approach Vol, veh/h		877			440			1592			1453	
Approach Delay, s/veh		323.0			56.4			29.1			56.9	
Approach LOS		F			E			C			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	67.4		23.0	33.2	43.8		23.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	9.5	58.5		18.5	28.7	39.3		18.5
Max Q Clear Time (g_c+I1), s	5.9	16.7		20.5	30.0	39.4		20.5
Green Ext Time (p_c), s	0.0	8.7		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			100.2
HCM 6th LOS			F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	1654	141	0	1738	488	589	1088	10	214	932	11
Future Volume (veh/h)	0	1654	141	0	1738	488	589	1088	10	214	932	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1798	153	0	1889	530	640	1183	11	233	1013	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	2375	202	0	1761	785	613	1276	12	245	1064	13
Arrive On Green	0.00	0.50	0.50	0.00	0.50	0.50	0.18	0.24	0.24	0.14	0.20	0.20
Sat Flow, veh/h	0	4963	407	0	3647	1585	3456	5217	49	1781	5202	62
Grp Volume(v), veh/h	0	1275	676	0	1889	530	640	772	422	233	663	362
Grp Sat Flow(s),veh/h/ln	0	1702	1797	0	1777	1585	1728	1702	1862	1781	1702	1859
Q Serve(g_s), s	0.0	33.2	33.5	0.0	54.5	27.9	19.5	24.4	24.4	14.3	21.2	21.2
Cycle Q Clear(g_c), s	0.0	33.2	33.5	0.0	54.5	27.9	19.5	24.4	24.4	14.3	21.2	21.2
Prop In Lane	0.00		0.23	0.00		1.00	1.00		0.03	1.00		0.03
Lane Grp Cap(c), veh/h	0	1687	890	0	1761	785	613	832	455	245	696	380
V/C Ratio(X)	0.00	0.76	0.76	0.00	1.07	0.67	1.04	0.93	0.93	0.95	0.95	0.95
Avail Cap(c_a), veh/h	0	1687	890	0	1761	785	613	832	455	245	696	380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	22.4	22.4	0.0	27.8	21.0	45.3	40.6	40.6	47.1	43.2	43.2
Incr Delay (d2), s/veh	0.0	2.0	3.8	0.0	44.0	2.3	48.6	17.8	27.4	44.5	24.2	35.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.8	14.0	0.0	31.8	24.9	12.2	11.9	14.2	9.2	11.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.4	26.3	0.0	71.8	23.3	93.8	58.4	68.0	91.6	67.4	78.8
LnGrp LOS	A	C	C	A	F	C	F	E	E	F	E	E
Approach Vol, veh/h		1951			2419			1834			1258	
Approach Delay, s/veh		25.0			61.1			73.0			75.2	
Approach LOS		C			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.0	27.0		59.0	19.6	31.4		59.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.5	22.5		54.5	15.1	26.9		54.5
Max Q Clear Time (g_c+I1), s	21.5	23.2		35.5	16.3	26.4		56.5
Green Ext Time (p_c), s	0.0	0.0		12.9	0.0	0.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.0
HCM 6th LOS	E

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	78	407	125	462	362	6	98	1162	62	119	1170	342
Future Volume (veh/h)	78	407	125	462	362	6	98	1162	62	119	1170	342
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	442	136	502	393	0	107	1263	67	129	1272	372
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	697	858	383	628	1204		134	1697	90	145	1746	542
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.00	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	3554	1585	1781	5106	1585	305	4964	263	412	5106	1585
Grp Volume(v), veh/h	85	442	136	502	393	0	107	866	464	129	1272	372
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1702	1585	305	1702	1823	412	1702	1585
Q Serve(g_s), s	2.0	8.0	5.3	15.5	4.8	0.0	9.2	16.8	16.8	8.7	16.3	15.1
Cycle Q Clear(g_c), s	2.0	8.0	5.3	15.5	4.8	0.0	25.5	16.8	16.8	25.5	16.3	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	697	858	383	628	1204		134	1164	623	145	1746	542
V/C Ratio(X)	0.12	0.52	0.36	0.80	0.33		0.80	0.74	0.74	0.89	0.73	0.69
Avail Cap(c_a), veh/h	697	858	383	638	1232		134	1164	623	145	1746	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	24.5	23.5	15.5	23.6	0.0	35.7	21.7	21.7	35.7	21.5	21.1
Incr Delay (d2), s/veh	0.4	2.2	2.6	7.0	0.2	0.0	27.7	2.6	4.8	44.2	1.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.5	2.2	6.8	1.9	0.0	2.9	6.7	7.5	4.1	6.3	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	26.7	26.1	22.5	23.8	0.0	63.3	24.3	26.5	79.9	23.1	24.7
LnGrp LOS	B	C	C	C	C		E	C	C	E	C	C
Approach Vol, veh/h		663			895	A		1437			1773	
Approach Delay, s/veh		24.6			23.1			27.9			27.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.1	22.5		30.0	22.5	22.1		30.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.0	18.0		25.5	18.0	18.0		25.5
Max Q Clear Time (g_c+I1), s	17.5	10.0		27.5	4.0	6.8		27.5
Green Ext Time (p_c), s	0.1	2.1		0.0	0.1	1.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	333	1305	357	396	1424	401	319	1181	467	537	1107	365
Future Volume (veh/h)	333	1305	357	396	1424	401	319	1181	467	537	1107	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	362	1418	388	430	1548	436	347	1284	508	584	1203	397
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	1641	464	452	1604	498	371	1306	406	590	1212	400
Arrive On Green	0.11	0.29	0.29	0.13	0.31	0.31	0.11	0.26	0.26	0.17	0.32	0.32
Sat Flow, veh/h	3563	5611	1585	3456	5106	1585	3456	5106	1585	3456	3797	1252
Grp Volume(v), veh/h	362	1418	388	430	1548	436	347	1284	508	584	1078	522
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1702	1585	1728	1702	1585	1728	1702	1645
Q Serve(g_s), s	12.1	28.7	27.5	14.8	35.8	31.2	12.0	30.0	30.7	20.2	37.9	37.9
Cycle Q Clear(g_c), s	12.1	28.7	27.5	14.8	35.8	31.2	12.0	30.0	30.7	20.2	37.9	37.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	389	1641	464	452	1604	498	371	1306	406	590	1086	525
V/C Ratio(X)	0.93	0.86	0.84	0.95	0.96	0.88	0.93	0.98	1.25	0.99	0.99	0.99
Avail Cap(c_a), veh/h	389	1641	464	452	1604	498	371	1306	406	590	1086	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	40.2	39.8	51.8	40.5	38.9	53.1	44.4	44.7	49.6	40.7	40.7
Incr Delay (d2), s/veh	28.8	5.1	12.6	30.2	15.0	15.9	30.4	21.1	132.6	34.2	25.6	37.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	13.3	11.8	8.1	16.3	13.7	6.7	14.8	26.4	11.3	19.1	20.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.8	45.3	52.4	81.9	55.5	54.9	83.5	65.5	177.3	83.8	66.3	78.5
LnGrp LOS	F	D	D	F	E	D	F	E	F	F	E	E
Approach Vol, veh/h		2168			2414			2139			2184	
Approach Delay, s/veh		52.6			60.1			95.0			73.9	
Approach LOS		D			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	42.8	20.2	39.6	25.0	35.2	17.6	42.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	38.3	15.7	35.1	20.5	30.7	13.1	37.7
Max Q Clear Time (g_c+I1), s	14.0	39.9	16.8	30.7	22.2	32.7	14.1	37.8
Green Ext Time (p_c), s	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	70.0
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1833	228	0	1533	562	0	0	786	1004	272	702
Future Volume (vph)	0	1833	228	0	1533	562	0	0	786	1004	272	702
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor		0.86			0.91	1.00			1.00	0.97	0.91	0.91
Frt		0.98			1.00	0.85			0.86	1.00	0.92	0.85
Flt Protected		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (prot)		6301			5085	1583			1611	3433	3104	1441
Flt Permitted		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (perm)		6301			5085	1583			1611	3433	3104	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1992	248	0	1666	611	0	0	854	1091	296	763
RTOR Reduction (vph)	0	19	0	0	0	331	0	0	34	0	0	5
Lane Group Flow (vph)	0	2221	0	0	1666	280	0	0	820	1091	678	376
Turn Type		NA			NA	Perm			Perm	Prot	NA	Perm
Protected Phases		4			8					1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)		33.5			33.5	33.5			46.5	26.5	77.5	77.5
Effective Green, g (s)		33.5			33.5	33.5			46.5	26.5	77.5	77.5
Actuated g/C Ratio		0.28			0.28	0.28			0.39	0.22	0.65	0.65
Clearance Time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1759			1419	441			624	758	2004	930
v/s Ratio Prot		c0.35			0.33					c0.32	0.22	
v/s Ratio Perm						0.18			c0.51			0.26
v/c Ratio		1.26			1.17	0.64			1.31	1.44	0.34	0.40
Uniform Delay, d1		43.2			43.2	37.9			36.8	46.8	9.6	10.2
Progression Factor		1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2		123.0			86.1	3.0			152.7	205.2	0.5	1.3
Delay (s)		166.2			129.4	40.9			189.5	251.9	10.1	11.5
Level of Service		F			F	D			F	F	B	B
Approach Delay (s)		166.2			105.6			189.5			133.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	141.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	118.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2966	0	0	1179	767	524	0	552	0	0	0
Future Volume (vph)	0	2966	0	0	1179	767	524	0	552	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5	4.5		4.5			
Lane Util. Factor		0.86			0.95	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		6408			3539	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		6408			3539	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	3224	0	0	1282	834	570	0	600	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	382	0	0	19	0	0	0
Lane Group Flow (vph)	0	3224	0	0	1282	452	570	0	581	0	0	0
Turn Type		NA			NA	Perm	Perm		Perm			
Protected Phases		4			8							
Permitted Phases						8	2		2			
Actuated Green, G (s)		32.5			32.5	32.5	18.5		18.5			
Effective Green, g (s)		32.5			32.5	32.5	18.5		18.5			
Actuated g/C Ratio		0.54			0.54	0.54	0.31		0.31			
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		3471			1916	857	1058		859			
v/s Ratio Prot		c0.50			0.36							
v/s Ratio Perm						0.29	0.17		c0.21			
v/c Ratio		0.93			0.67	0.53	0.54		0.68			
Uniform Delay, d1		12.7			9.9	8.8	17.2		18.1			
Progression Factor		1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2		5.1			0.9	0.6	2.0		4.3			
Delay (s)		17.8			10.8	9.4	19.2		22.4			
Level of Service		B			B	A	B		C			
Approach Delay (s)		17.8			10.2			20.8			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	221	27	1007	74	963
v/c Ratio	0.13	0.39	0.08	0.43	0.23	0.41
Control Delay	9.1	10.7	4.9	5.1	6.9	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	10.7	4.9	5.1	6.9	5.2
Queue Length 50th (ft)	3	13	2	49	6	49
Queue Length 95th (ft)	19	33	10	96	26	94
Internal Link Dist (ft)	55	291		153		271
Turn Bay Length (ft)			40		100	
Base Capacity (vph)	724	1264	346	2318	326	2347
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.17	0.08	0.43	0.23	0.41

Intersection Summary

Distance to freeway off-ramp is is approx. 160 ft.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	362	30	1838	99	944
v/c Ratio	0.31	0.74	0.08	0.73	0.96	0.37
Control Delay	16.7	38.2	4.8	9.4	100.3	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	38.2	4.8	9.4	100.3	5.2
Queue Length 50th (ft)	16	83	4	257	42	87
Queue Length 95th (ft)	58	132	13	376	#103	128
Internal Link Dist (ft)	55	291		153		271
Turn Bay Length (ft)			40		100	
Base Capacity (vph)	361	578	379	2517	103	2558
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.63	0.08	0.73	0.96	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Distance to freeway off-ramp is is approx. 160 ft.

Lane Group	EBL	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	314	176	1004	541	204	1463	295	2134
v/c Ratio	0.17	0.09	1.20	1.17	1.03	0.88	0.92	1.57dr
Control Delay	15.3	26.7	130.2	146.3	131.1	52.6	92.8	64.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	26.7	130.2	146.3	131.1	52.6	92.8	64.4
Queue Length 50th (ft)	65	35	~945	~279	~94	340	129	~500
Queue Length 95th (ft)	91	53	#1204	#394	#176	388	#217	#595
Internal Link Dist (ft)		430				303		392
Turn Bay Length (ft)	175		300	150	175		140	
Base Capacity (vph)	1861	1897	834	462	198	1660	319	2002
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.09	1.20	1.17	1.03	0.88	0.92	1.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBL	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	314	176	1004	541	204	1463	295	2134
v/c Ratio	0.17	0.09	1.20	1.17	1.03	0.88	0.92	1.57dr
Control Delay	15.3	26.7	130.2	146.3	131.1	52.6	92.8	64.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	26.7	130.2	146.3	131.1	52.6	92.8	64.4
Queue Length 50th (ft)	65	35	~945	~279	~94	340	129	~500
Queue Length 95th (ft)	91	53	#1204	#394	#176	388	#217	#595
Internal Link Dist (ft)		430				303		392
Turn Bay Length (ft)	175		300	150	175		140	
Base Capacity (vph)	1861	1897	834	462	198	1660	319	2002
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.09	1.20	1.17	1.03	0.88	0.92	1.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

APPENDIX D

HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE WORKSHEETS

General Plan Buildout (2040) With Proposed Land Use Element

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	979	121	75	1350	151	233	533	185	303	492	163
Future Volume (veh/h)	164	979	121	75	1350	151	233	533	185	303	492	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	178	1064	132	82	1467	164	253	579	201	329	535	177
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	2101	260	217	1424	159	279	746	333	327	841	375
Arrive On Green	0.10	0.46	0.46	0.31	0.31	0.31	0.16	0.21	0.21	0.18	0.24	0.24
Sat Flow, veh/h	1781	4602	570	468	4660	521	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	178	787	409	82	1071	560	253	579	201	329	535	177
Grp Sat Flow(s),veh/h/ln	1781	1702	1768	468	1702	1777	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.0	14.7	14.7	13.5	27.5	27.5	12.6	13.8	10.3	16.5	12.2	8.6
Cycle Q Clear(g_c), s	9.0	14.7	14.7	14.7	27.5	27.5	12.6	13.8	10.3	16.5	12.2	8.6
Prop In Lane	1.00		0.32	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	1555	807	217	1040	543	279	746	333	327	841	375
V/C Ratio(X)	0.99	0.51	0.51	0.38	1.03	1.03	0.91	0.78	0.60	1.01	0.64	0.47
Avail Cap(c_a), veh/h	180	1555	807	217	1040	543	279	746	333	327	841	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	17.3	17.3	27.3	31.3	31.3	37.3	33.6	32.2	36.8	30.9	29.5
Incr Delay (d2), s/veh	63.5	0.3	0.5	1.1	35.9	46.8	30.8	7.8	7.9	51.7	3.7	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.6	5.9	1.6	16.2	18.5	7.8	6.7	4.7	11.8	5.6	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.9	17.5	17.8	28.4	67.1	78.0	68.1	41.3	40.1	88.4	34.5	33.7
LnGrp LOS	F	B	B	C	F	F	E	D	D	F	C	C
Approach Vol, veh/h		1374			1713			1033			1041	
Approach Delay, s/veh		28.8			68.8			47.6			51.4	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	23.4		45.6	18.6	25.8	13.6	32.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	18.9		41.1	14.1	21.3	9.1	27.5
Max Q Clear Time (g_c+I1), s	18.5	15.8		16.7	14.6	14.2	11.0	29.5
Green Ext Time (p_c), s	0.0	1.4		9.6	0.0	2.5	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		50.4
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	681	283	220	696	0	320	0	190	0	0	0
Future Volume (veh/h)	0	681	283	220	696	0	320	0	190	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	740	308	239	757	0	348	0	207	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	879	392	325	1444	0	438	0	1469	0	514	0
Arrive On Green	0.00	0.25	0.25	0.09	0.41	0.00	0.12	0.00	0.46	0.00	0.00	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	3563	0	3170	0	1870	0
Grp Volume(v), veh/h	0	740	308	239	757	0	348	0	207	0	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	0	1585	0	1870	0
Q Serve(g_s), s	0.0	13.7	12.5	4.6	11.1	0.0	6.6	0.0	2.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.7	12.5	4.6	11.1	0.0	6.6	0.0	2.6	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	879	392	325	1444	0	438	0	1469	0	514	0
V/C Ratio(X)	0.00	0.84	0.79	0.73	0.52	0.00	0.79	0.00	0.14	0.00	0.00	0.00
Avail Cap(c_a), veh/h	129	926	413	325	1444	0	438	0	1469	0	514	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.7	24.3	30.5	15.5	0.0	29.4	0.0	10.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.8	9.3	8.4	0.3	0.0	9.7	0.0	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.3	5.5	2.3	4.3	0.0	3.3	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.6	33.5	38.8	15.8	0.0	39.1	0.0	10.8	0.0	0.0	0.0
LnGrp LOS	A	C	C	D	B	A	D	A	B	A	A	A
Approach Vol, veh/h		1048			996			555			0	
Approach Delay, s/veh		32.1			21.3			28.6			0.0	
Approach LOS		C			C			C				

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		36.5	11.0	21.6	13.0	23.5	0.0	32.6
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		32.0	6.5	18.0	8.5	19.0	5.0	19.5
Max Q Clear Time (g_c+I1), s		4.6	6.6	15.7	8.6	0.0	0.0	13.1
Green Ext Time (p_c), s		0.8	0.0	1.4	0.0	0.0	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	833	104	49	1172	116	181	426	52	238	402	176
Future Volume (veh/h)	94	833	104	49	1172	116	181	426	52	238	402	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	102	905	113	53	1274	126	197	463	57	259	437	191
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	1564	698	68	1336	132	283	564	251	396	536	232
Arrive On Green	0.07	0.44	0.44	0.04	0.41	0.41	0.16	0.16	0.16	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3267	322	1781	3554	1585	1781	2414	1045
Grp Volume(v), veh/h	102	905	113	53	691	709	197	463	57	259	321	307
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1812	1781	1777	1585	1781	1777	1682
Q Serve(g_s), s	7.2	24.5	5.5	3.8	48.1	48.6	13.4	16.1	4.0	16.9	21.9	22.3
Cycle Q Clear(g_c), s	7.2	24.5	5.5	3.8	48.1	48.6	13.4	16.1	4.0	16.9	21.9	22.3
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	124	1564	698	68	727	741	283	564	251	396	395	374
V/C Ratio(X)	0.82	0.58	0.16	0.77	0.95	0.96	0.70	0.82	0.23	0.65	0.81	0.82
Avail Cap(c_a), veh/h	124	1564	698	135	734	749	283	564	251	555	554	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	26.9	21.6	61.0	36.6	36.7	50.9	52.1	47.0	45.3	47.2	47.4
Incr Delay (d2), s/veh	34.3	0.5	0.1	16.7	21.8	22.7	13.4	12.7	2.1	1.8	6.2	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	10.3	2.1	2.0	24.7	25.5	7.0	8.1	1.7	7.6	10.3	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.0	27.4	21.7	77.7	58.4	59.4	64.3	64.8	49.1	47.1	53.5	54.6
LnGrp LOS	F	C	C	E	E	E	E	E	D	D	D	D
Approach Vol, veh/h		1120			1453			717			887	
Approach Delay, s/veh		32.8			59.6			63.4			52.0	
Approach LOS		C			E			E			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		24.8	9.4	60.8		32.9	13.4	56.9
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		20.3	9.7	52.1		39.9	8.9	52.9
Max Q Clear Time (g_c+I1), s		18.1	5.8	26.5		24.3	9.2	50.6
Green Ext Time (p_c), s		0.9	0.0	7.3		4.2	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	51.5
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	775	76	79	1370	128	125	430	64	89	490	105
Future Volume (veh/h)	103	775	76	79	1370	128	125	430	64	89	490	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	842	83	86	1489	139	136	467	70	97	533	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	1706	167	114	1637	153	278	1075	160	322	1011	215
Arrive On Green	0.08	0.36	0.36	0.06	0.34	0.34	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	4727	464	1781	4751	443	784	3101	463	868	2915	621
Grp Volume(v), veh/h	112	605	320	86	1067	561	136	267	270	97	324	323
Grp Sat Flow(s),veh/h/ln	1781	1702	1787	1781	1702	1791	784	1777	1787	868	1777	1759
Q Serve(g_s), s	3.6	8.2	8.2	2.8	17.7	17.7	9.9	6.8	6.9	5.7	8.6	8.7
Cycle Q Clear(g_c), s	3.6	8.2	8.2	2.8	17.7	17.7	18.6	6.8	6.9	12.6	8.6	8.7
Prop In Lane	1.00		0.26	1.00		0.25	1.00		0.26	1.00		0.35
Lane Grp Cap(c), veh/h	143	1229	645	114	1173	617	278	616	620	322	616	610
V/C Ratio(X)	0.78	0.49	0.50	0.75	0.91	0.91	0.49	0.43	0.44	0.30	0.53	0.53
Avail Cap(c_a), veh/h	166	1229	645	217	1180	621	278	616	620	322	616	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	14.7	14.7	27.2	18.5	18.5	22.9	14.8	14.9	19.7	15.4	15.5
Incr Delay (d2), s/veh	18.7	0.3	0.6	9.7	10.4	17.5	6.0	2.2	2.2	2.4	3.2	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.7	2.9	1.4	7.5	9.1	2.2	2.8	2.9	1.3	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	15.0	15.3	36.9	28.9	36.0	28.9	17.0	17.1	22.1	18.6	18.7
LnGrp LOS	D	B	B	D	C	D	C	B	B	C	B	B
Approach Vol, veh/h		1037			1714			673			744	
Approach Delay, s/veh		18.4			31.6			19.5			19.1	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.0	8.3	25.8		25.0	9.3	24.9
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		20.5	7.2	18.8		20.5	5.5	20.5
Max Q Clear Time (g_c+I1), s		20.6	4.8	10.2		14.6	5.6	19.7
Green Ext Time (p_c), s		0.0	0.0	3.6		2.3	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	889	72	121	1259	92	194	643	56	183	539	131
Future Volume (veh/h)	106	889	72	121	1259	92	194	643	56	183	539	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	966	78	132	1368	100	211	699	61	199	586	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	1381	111	166	1457	106	238	900	402	226	877	391
Arrive On Green	0.08	0.29	0.29	0.09	0.30	0.30	0.13	0.25	0.25	0.13	0.25	0.25
Sat Flow, veh/h	1781	4816	388	1781	4856	355	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	115	682	362	132	959	509	211	699	61	199	586	142
Grp Sat Flow(s),veh/h/ln	1781	1702	1801	1781	1702	1806	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.8	13.4	13.5	5.4	20.6	20.6	8.7	13.7	2.2	8.2	11.2	5.6
Cycle Q Clear(g_c), s	4.8	13.4	13.5	5.4	20.6	20.6	8.7	13.7	2.2	8.2	11.2	5.6
Prop In Lane	1.00		0.22	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	976	516	166	1021	542	238	900	402	226	877	391
V/C Ratio(X)	0.81	0.70	0.70	0.79	0.94	0.94	0.89	0.78	0.15	0.88	0.67	0.36
Avail Cap(c_a), veh/h	143	976	516	207	1021	542	238	900	402	226	877	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	23.9	23.9	33.3	25.6	25.6	32.0	26.0	21.7	32.2	25.5	23.4
Incr Delay (d2), s/veh	27.9	2.2	4.2	15.5	15.7	24.5	30.8	6.5	0.8	30.8	4.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	5.3	5.9	3.0	9.9	11.8	5.7	6.3	0.9	5.4	5.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.8	26.1	28.1	48.8	41.2	50.1	62.8	32.5	22.5	63.0	29.5	26.0
LnGrp LOS	E	C	C	D	D	D	E	C	C	E	C	C
Approach Vol, veh/h		1159			1600			971			927	
Approach Delay, s/veh		30.3			44.7			38.5			36.2	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	23.5	11.5	26.0	14.5	23.0	10.5	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	19.0	8.7	19.8	10.0	18.5	6.0	22.5
Max Q Clear Time (g_c+I1), s	10.2	15.7	7.4	15.5	10.7	13.2	6.8	22.6
Green Ext Time (p_c), s	0.0	1.5	0.0	2.5	0.0	2.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	229	0	262	465	561	0	0	898	520
Future Volume (veh/h)	0	0	0	229	0	262	465	561	0	0	898	520
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				249	0	285	505	610	0	0	976	565
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				785	0	349	614	2240	0	0	1286	599
Arrive On Green				0.22	0.00	0.22	0.18	0.63	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	3572	1585
Grp Volume(v), veh/h				249	0	285	505	610	0	0	976	565
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				3.5	0.0	10.3	8.5	4.6	0.0	0.0	15.1	20.8
Cycle Q Clear(g_c), s				3.5	0.0	10.3	8.5	4.6	0.0	0.0	15.1	20.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				785	0	349	614	2240	0	0	1286	599
V/C Ratio(X)				0.32	0.00	0.82	0.82	0.27	0.00	0.00	0.76	0.94
Avail Cap(c_a), veh/h				1064	0	473	659	2240	0	0	1286	599
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.7	0.0	22.3	23.9	5.0	0.0	0.0	16.4	18.1
Incr Delay (d2), s/veh				0.2	0.0	7.8	7.8	0.3	0.0	0.0	4.2	25.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	4.1	3.9	1.3	0.0	0.0	5.9	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.9	0.0	30.2	31.7	5.3	0.0	0.0	20.6	43.3
LnGrp LOS				B	A	C	C	A	A	A	C	D
Approach Vol, veh/h					534			1115			1541	
Approach Delay, s/veh					25.4			17.2			28.9	
Approach LOS					C			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.5			15.2	27.3		17.8				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		38.0			11.5	22.0		18.0				
Max Q Clear Time (g_c+I1), s		6.6			10.5	22.8		12.3				
Green Ext Time (p_c), s		4.6			0.2	0.0		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	0	270	0	0	0	0	972	302	318	827	0
Future Volume (veh/h)	62	0	270	0	0	0	0	972	302	318	827	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	45	0	317				0	1057	328	346	899	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	275	0	489				0	1552	692	474	2362	0
Arrive On Green	0.15	0.00	0.15				0.00	0.44	0.44	0.14	0.66	0.00
Sat Flow, veh/h	1781	0	3170				0	3647	1585	3456	3647	0
Grp Volume(v), veh/h	45	0	317				0	1057	328	346	899	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1728	1777	0
Q Serve(g_s), s	1.1	0.0	4.7				0.0	11.8	7.3	4.8	5.6	0.0
Cycle Q Clear(g_c), s	1.1	0.0	4.7				0.0	11.8	7.3	4.8	5.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	275	0	489				0	1552	692	474	2362	0
V/C Ratio(X)	0.16	0.00	0.65				0.00	0.68	0.47	0.73	0.38	0.00
Avail Cap(c_a), veh/h	646	0	1149				0	1552	692	522	2362	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.2	0.0	19.7				0.0	11.2	9.9	20.5	3.7	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.5				0.0	2.4	2.3	4.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.6				0.0	4.2	2.5	2.0	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	21.2				0.0	13.6	12.2	25.2	4.2	0.0
LnGrp LOS	B	A	C				A	B	B	C	A	A
Approach Vol, veh/h		362						1385			1245	
Approach Delay, s/veh		20.9						13.3			10.0	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.3	26.2		12.2		37.5
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	7.5	21.0		18.0		33.0
Max Q Clear Time (g_c+I1), s	6.8	13.8		6.7		7.6
Green Ext Time (p_c), s	0.1	4.6		1.0		7.1

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	12	34	83	13	112	26	917	130	68	931	9
Future Volume (veh/h)	4	12	34	83	13	112	26	917	130	68	931	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	13	37	90	14	122	28	997	141	74	1012	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	67	161	329	40	207	449	2026	286	406	2337	23
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	53	464	1125	1207	281	1442	552	3126	442	494	3605	36
Grp Volume(v), veh/h	54	0	0	104	0	122	28	566	572	74	499	523
Grp Sat Flow(s),veh/h/ln	1642	0	0	1488	0	1442	552	1777	1791	494	1777	1864
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	3.4	1.1	7.1	7.1	3.9	5.9	5.9
Cycle Q Clear(g_c), s	1.2	0.0	0.0	2.6	0.0	3.4	7.1	7.1	7.1	11.1	5.9	5.9
Prop In Lane	0.07		0.69	0.87		1.00	1.00		0.25	1.00		0.02
Lane Grp Cap(c), veh/h	325	0	0	369	0	207	449	1152	1161	406	1152	1208
V/C Ratio(X)	0.17	0.00	0.00	0.28	0.00	0.59	0.06	0.49	0.49	0.18	0.43	0.43
Avail Cap(c_a), veh/h	766	0	0	753	0	601	449	1152	1161	406	1152	1208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	0.0	16.9	0.0	17.3	5.4	3.9	3.9	6.8	3.7	3.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	2.7	0.3	1.5	1.5	1.0	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.9	0.0	1.1	0.1	1.6	1.6	0.4	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	0.0	0.0	17.3	0.0	20.0	5.7	5.4	5.4	7.8	4.9	4.9
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		54			226			1166			1096	
Approach Delay, s/veh		16.6			18.7			5.4			5.1	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	32.5	10.7	32.5	10.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	28.0	18.0	28.0	18.0
Max Q Clear Time (g_c+I1), s	9.1	3.2	13.1	5.4
Green Ext Time (p_c), s	8.0	0.2	6.5	1.0

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (veh/h)	193	444	0	708	364	1	1056	331	0	0
Future Volume (veh/h)	193	444	0	708	364	1	1056	331	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	210	483	0	770	396	1	1148	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	0	2	2	2	2	2		
Cap, veh/h	613	545	0	1651	769	69	1691			
Arrive On Green	0.34	0.34	0.00	0.48	0.48	0.48	0.48	0.00		
Sat Flow, veh/h	1781	1585	0	3572	1585	0	3486	1585		
Grp Volume(v), veh/h	210	483	0	770	396	616	533	0		
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1702	1585	1869	1617	1585		
Q Serve(g_s), s	4.6	15.1	0.0	7.9	9.0	0.0	13.3	0.0		
Cycle Q Clear(g_c), s	4.6	15.1	0.0	7.9	9.0	13.3	13.3	0.0		
Prop In Lane	1.00	1.00	0.00		1.00	0.00		1.00		
Lane Grp Cap(c), veh/h	613	545	0	1651	769	975	784			
V/C Ratio(X)	0.34	0.89	0.00	0.47	0.52	0.63	0.68			
Avail Cap(c_a), veh/h	694	618	0	1651	769	975	784			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	12.8	16.3	0.0	9.0	9.3	10.4	10.4	0.0		
Incr Delay (d2), s/veh	0.3	13.4	0.0	0.9	2.5	3.1	4.7	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.7	6.8	0.0	2.5	3.0	5.1	4.7	0.0		
Unsig. Movement Delay, s/veh										
LnGrp Delay(d),s/veh	13.2	29.7	0.0	10.0	11.8	13.5	15.1	0.0		
LnGrp LOS	B	C	A	A	B	B	B			
Approach Vol, veh/h	693			1166			1149	A		
Approach Delay, s/veh	24.7			10.6			14.3			
Approach LOS	C			B			B			

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.0		22.6		30.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		20.5		25.5
Max Q Clear Time (g_c+I1), s		11.0		17.1		15.3
Green Ext Time (p_c), s		7.0		1.0		5.3

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	796	216	209	1272	126	80	684	231	58	780	72
Future Volume (veh/h)	113	796	216	209	1272	126	80	684	231	58	780	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	865	235	227	1383	137	87	743	251	63	848	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	1143	309	258	1619	160	190	1223	546	217	1133	104
Arrive On Green	0.09	0.29	0.29	0.14	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	3999	1081	1781	4722	468	604	3554	1585	567	3290	303
Grp Volume(v), veh/h	123	736	364	227	997	523	87	743	251	63	458	468
Grp Sat Flow(s),veh/h/ln	1781	1702	1676	1781	1702	1786	604	1777	1585	567	1777	1816
Q Serve(g_s), s	4.1	11.8	11.9	7.5	16.3	16.3	7.0	10.4	7.4	6.2	13.7	13.7
Cycle Q Clear(g_c), s	4.1	11.8	11.9	7.5	16.3	16.3	20.7	10.4	7.4	16.6	13.7	13.7
Prop In Lane	1.00		0.64	1.00		0.26	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	157	973	479	258	1167	612	190	1223	546	217	612	625
V/C Ratio(X)	0.78	0.76	0.76	0.88	0.85	0.85	0.46	0.61	0.46	0.29	0.75	0.75
Avail Cap(c_a), veh/h	163	1021	503	258	1203	631	190	1223	546	217	612	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	19.5	19.6	25.1	18.3	18.3	27.2	16.3	15.3	23.2	17.4	17.4
Incr Delay (d2), s/veh	21.1	3.1	6.4	27.3	6.1	10.8	7.7	2.2	2.8	3.4	8.2	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.6	5.0	4.9	6.5	7.7	1.6	4.2	2.7	1.0	6.4	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	22.7	26.0	52.4	24.4	29.2	34.9	18.6	18.1	26.6	25.6	25.4
LnGrp LOS	D	C	C	D	C	C	C	B	B	C	C	C
Approach Vol, veh/h		1223			1747			1081			989	
Approach Delay, s/veh		26.2			29.5			19.8			25.5	
Approach LOS		C			C			B			C	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.2	13.2	21.6		25.2	9.8	25.1
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		19.8	8.7	18.0		19.8	5.5	21.2
Max Q Clear Time (g_c+I1), s		22.7	9.5	13.9		18.6	6.1	18.3
Green Ext Time (p_c), s		0.0	0.0	2.5		0.7	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	964	87	237	1466	146	103	549	217	61	380	131
Future Volume (veh/h)	114	964	87	237	1466	146	103	549	217	61	380	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	1048	95	258	1593	159	112	597	236	66	413	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1411	128	290	1746	174	313	1120	499	237	1120	499
Arrive On Green	0.09	0.30	0.30	0.16	0.37	0.37	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	4765	431	1781	4719	470	854	3554	1585	659	3554	1585
Grp Volume(v), veh/h	124	748	395	258	1148	604	112	597	236	66	413	142
Grp Sat Flow(s),veh/h/ln	1781	1702	1793	1781	1702	1786	854	1777	1585	659	1777	1585
Q Serve(g_s), s	4.1	11.8	11.9	8.5	19.1	19.2	7.0	8.2	7.1	5.5	5.4	4.0
Cycle Q Clear(g_c), s	4.1	11.8	11.9	8.5	19.1	19.2	12.4	8.2	7.1	13.7	5.4	4.0
Prop In Lane	1.00		0.24	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	1008	531	290	1259	661	313	1120	499	237	1120	499
V/C Ratio(X)	0.78	0.74	0.74	0.89	0.91	0.91	0.36	0.53	0.47	0.28	0.37	0.28
Avail Cap(c_a), veh/h	164	1027	541	290	1267	664	313	1120	499	237	1120	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	18.9	19.0	24.5	17.9	17.9	20.6	16.8	16.4	22.5	15.8	15.4
Incr Delay (d2), s/veh	21.0	2.9	5.4	27.1	10.1	17.1	3.2	1.8	3.2	2.9	0.9	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.5	5.1	5.4	8.1	9.8	1.6	3.3	2.7	1.0	2.1	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	21.8	24.4	51.5	28.0	35.0	23.8	18.6	19.6	25.4	16.8	16.8
LnGrp LOS	D	C	C	D	C	D	C	B	B	C	B	B
Approach Vol, veh/h		1267			2010			945			621	
Approach Delay, s/veh		25.2			33.1			19.5			17.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		23.3	14.2	22.2		23.3	9.8	26.6
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		18.8	9.7	18.0		18.8	5.5	22.2
Max Q Clear Time (g_c+I1), s		14.4	10.5	13.9		15.7	6.1	21.2
Green Ext Time (p_c), s		2.2	0.0	2.6		1.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	1021	89	40	1450	209	92	613	25	164	422	281
Future Volume (veh/h)	201	1021	89	40	1450	209	92	613	25	164	422	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	218	1110	97	43	1576	227	100	666	27	178	459	305
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	2216	193	65	1629	234	273	770	31	248	865	386
Arrive On Green	0.14	0.46	0.46	0.04	0.36	0.36	0.06	0.22	0.22	0.08	0.24	0.24
Sat Flow, veh/h	1781	4782	418	1781	4510	648	1781	3481	141	1781	3554	1585
Grp Volume(v), veh/h	218	790	417	43	1189	614	100	340	353	178	459	305
Grp Sat Flow(s),veh/h/ln	1781	1702	1795	1781	1702	1754	1781	1777	1845	1781	1777	1585
Q Serve(g_s), s	10.8	14.6	14.6	2.1	30.8	31.0	3.9	16.6	16.6	7.0	10.1	16.2
Cycle Q Clear(g_c), s	10.8	14.6	14.6	2.1	30.8	31.0	3.9	16.6	16.6	7.0	10.1	16.2
Prop In Lane	1.00		0.23	1.00		0.37	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	247	1577	832	65	1229	633	273	393	408	248	865	386
V/C Ratio(X)	0.88	0.50	0.50	0.66	0.97	0.97	0.37	0.86	0.87	0.72	0.53	0.79
Avail Cap(c_a), veh/h	247	1577	832	129	1229	633	273	393	408	248	865	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	16.9	16.9	42.8	28.2	28.3	25.3	33.8	33.8	26.4	29.6	31.9
Incr Delay (d2), s/veh	28.6	0.2	0.5	10.8	18.2	28.3	0.8	21.6	21.1	9.5	2.3	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	5.4	5.7	1.1	14.8	17.1	1.7	9.3	9.6	3.6	4.6	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.6	17.1	17.4	53.6	46.5	56.6	26.1	55.4	54.9	36.0	31.9	47.1
LnGrp LOS	E	B	B	D	D	E	C	E	D	D	C	D
Approach Vol, veh/h		1425			1846			793			942	
Approach Delay, s/veh		24.8			50.0			51.5			37.6	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	24.4	7.8	46.2	9.6	26.4	17.0	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.1	19.9	6.5	38.5	5.1	21.9	12.5	32.5
Max Q Clear Time (g_c+I1), s	9.0	18.6	4.1	16.6	5.9	18.2	12.8	33.0
Green Ext Time (p_c), s	0.0	0.6	0.0	8.4	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	1211	13	272	1548	66	150	995	276	92	500	177
Future Volume (veh/h)	260	1211	13	272	1548	66	150	995	276	92	500	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	283	1316	14	296	1683	72	163	1082	300	100	543	192
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	1423	15	317	1529	65	399	1006	277	148	1033	461
Arrive On Green	0.15	0.27	0.27	0.18	0.30	0.30	0.13	0.37	0.37	0.05	0.29	0.29
Sat Flow, veh/h	1781	5209	55	1781	5021	215	1781	2754	757	1781	3554	1585
Grp Volume(v), veh/h	283	860	470	296	1141	614	163	695	687	100	543	192
Grp Sat Flow(s),veh/h/ln	1781	1702	1860	1781	1702	1832	1781	1777	1734	1781	1777	1585
Q Serve(g_s), s	20.5	34.3	34.3	22.9	42.5	42.5	8.0	51.0	51.0	5.4	17.9	13.6
Cycle Q Clear(g_c), s	20.5	34.3	34.3	22.9	42.5	42.5	8.0	51.0	51.0	5.4	17.9	13.6
Prop In Lane	1.00		0.03	1.00		0.12	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	262	930	508	317	1036	558	399	649	634	148	1033	461
V/C Ratio(X)	1.08	0.92	0.92	0.93	1.10	1.10	0.41	1.07	1.08	0.67	0.53	0.42
Avail Cap(c_a), veh/h	262	930	508	318	1036	558	399	649	634	281	1298	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	49.3	49.3	56.5	48.5	48.5	26.4	44.3	44.3	37.6	41.4	39.9
Incr Delay (d2), s/veh	79.1	14.6	22.9	33.4	59.7	68.9	3.1	55.7	60.8	5.2	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	16.2	18.9	13.1	26.2	29.6	3.7	31.8	31.9	2.5	7.8	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.7	64.0	72.2	89.9	108.2	117.4	29.5	100.0	105.1	42.9	41.9	40.5
LnGrp LOS	F	E	E	F	F	F	C	F	F	D	D	D
Approach Vol, veh/h		1613			2051			1545			835	
Approach Delay, s/veh		79.5			108.3			94.8			41.7	
Approach LOS		E			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	55.5	29.4	42.6	22.5	45.1	25.0	47.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	51.0	24.9	38.1	18.0	51.0	20.5	42.5
Max Q Clear Time (g_c+I1), s	7.4	53.0	24.9	36.3	10.0	19.9	22.5	44.5
Green Ext Time (p_c), s	0.1	0.0	0.0	1.3	0.2	4.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	88.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	999	223	179	1179	240	202	641	99	227	945	151
Future Volume (veh/h)	136	999	223	179	1179	240	202	641	99	227	945	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	1086	242	195	1282	261	220	697	108	247	1027	164
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1281	285	218	1229	548	215	1189	182	275	1066	476
Arrive On Green	0.08	0.31	0.31	0.12	0.35	0.35	0.12	0.27	0.27	0.15	0.30	0.30
Sat Flow, veh/h	1781	4177	930	1781	3554	1585	1781	4466	685	1781	3554	1585
Grp Volume(v), veh/h	148	885	443	195	1282	261	220	530	275	247	1027	164
Grp Sat Flow(s),veh/h/ln	1781	1702	1703	1781	1777	1585	1781	1702	1747	1781	1777	1585
Q Serve(g_s), s	10.0	29.2	29.3	12.9	41.5	15.5	14.5	16.2	16.5	16.3	34.1	9.7
Cycle Q Clear(g_c), s	10.0	29.2	29.3	12.9	41.5	15.5	14.5	16.2	16.5	16.3	34.1	9.7
Prop In Lane	1.00		0.55	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	148	1044	522	218	1229	548	215	907	465	275	1066	476
V/C Ratio(X)	1.00	0.85	0.85	0.89	1.04	0.48	1.02	0.58	0.59	0.90	0.96	0.34
Avail Cap(c_a), veh/h	148	1044	522	218	1229	548	215	907	465	319	1066	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	39.0	39.0	51.9	39.3	30.7	52.8	38.2	38.3	49.8	41.3	32.8
Incr Delay (d2), s/veh	72.9	6.7	12.4	33.8	37.7	0.6	67.2	2.7	5.5	24.2	20.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	12.8	13.6	7.7	23.8	5.9	10.4	7.0	7.6	9.0	17.4	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.9	45.6	51.4	85.7	76.9	31.4	119.9	41.0	43.8	74.0	61.4	34.8
LnGrp LOS	F	D	D	F	F	C	F	D	D	E	E	C
Approach Vol, veh/h		1476			1738			1025			1438	
Approach Delay, s/veh		55.6			71.1			58.7			60.5	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	36.5	19.2	41.3	19.0	40.5	14.5	46.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	21.5	29.0	14.7	36.8	14.5	36.0	10.0	41.5
Max Q Clear Time (g_c+I1), s	18.3	18.5	14.9	31.3	16.5	36.1	12.0	43.5
Green Ext Time (p_c), s	0.2	3.6	0.0	3.6	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.1
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	794	285	262	1024	33	340	741	242	139	1246	177
Future Volume (veh/h)	99	794	285	262	1024	33	340	741	242	139	1246	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	863	310	285	1113	36	370	805	263	151	1354	192
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	1184	368	349	1386	45	442	1629	506	188	1701	241
Arrive On Green	0.06	0.23	0.23	0.10	0.27	0.27	0.13	0.32	0.32	0.11	0.30	0.30
Sat Flow, veh/h	3456	5106	1585	3456	5081	164	3456	5106	1585	1781	5738	811
Grp Volume(v), veh/h	108	863	310	285	746	403	370	805	263	151	1138	408
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1841	1728	1702	1585	1781	1609	1724
Q Serve(g_s), s	2.3	11.6	13.9	6.0	15.1	15.1	7.8	9.5	10.1	6.1	16.1	16.2
Cycle Q Clear(g_c), s	2.3	11.6	13.9	6.0	15.1	15.1	7.8	9.5	10.1	6.1	16.1	16.2
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	208	1184	368	349	929	502	442	1629	506	188	1431	511
V/C Ratio(X)	0.52	0.73	0.84	0.82	0.80	0.80	0.84	0.49	0.52	0.80	0.80	0.80
Avail Cap(c_a), veh/h	237	1239	384	349	936	506	442	1629	506	228	1431	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	26.3	27.2	32.7	25.1	25.1	31.6	20.4	20.6	32.4	24.0	24.1
Incr Delay (d2), s/veh	2.0	2.1	15.1	13.9	5.1	9.1	13.1	1.1	3.8	15.6	4.7	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.5	6.4	3.0	6.2	7.3	3.8	3.5	3.9	3.3	6.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	28.4	42.3	46.6	30.2	34.2	44.7	21.5	24.4	48.1	28.7	36.3
LnGrp LOS	D	C	D	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		1281			1434			1438			1697	
Approach Delay, s/veh		32.4			34.6			28.0			32.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	28.2	12.0	21.7	14.0	26.5	9.0	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	22.0	7.5	18.0	9.5	22.0	5.1	20.4
Max Q Clear Time (g_c+I1), s	8.1	12.1	8.0	15.9	9.8	18.2	4.3	17.1
Green Ext Time (p_c), s	0.0	4.2	0.0	1.4	0.0	2.8	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	333	481	26	240	1604	231	239	1476	318	288	1507	888
Future Volume (veh/h)	333	481	26	240	1604	231	239	1476	318	288	1507	888
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	362	523	28	261	1743	251	260	1604	346	313	1638	965
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	591	31	957	1414	439	761	1417	349	911	1346	735
Arrive On Green	0.12	0.12	0.12	0.28	0.28	0.28	0.22	0.22	0.22	0.26	0.26	0.26
Sat Flow, veh/h	3456	4963	264	3456	5106	1585	3456	6434	1585	3456	5106	2790
Grp Volume(v), veh/h	362	358	193	261	1743	251	260	1604	346	313	1638	965
Grp Sat Flow(s),veh/h/ln	1728	1702	1823	1728	1702	1585	1728	1609	1585	1728	1702	1395
Q Serve(g_s), s	15.4	15.5	15.7	8.9	41.5	20.4	9.5	33.0	32.6	11.0	39.5	39.5
Cycle Q Clear(g_c), s	15.4	15.5	15.7	8.9	41.5	20.4	9.5	33.0	32.6	11.0	39.5	39.5
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	405	217	957	1414	439	761	1417	349	911	1346	735
V/C Ratio(X)	0.88	0.88	0.89	0.27	1.23	0.57	0.34	1.13	0.99	0.34	1.22	1.31
Avail Cap(c_a), veh/h	415	409	219	957	1414	439	761	1417	349	911	1346	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.9	65.0	65.0	42.4	54.2	46.5	49.3	58.4	58.3	44.7	55.2	55.2
Incr Delay (d2), s/veh	18.9	19.5	33.1	0.2	111.0	1.8	1.2	68.8	46.0	1.0	104.6	150.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	7.7	9.2	3.8	32.0	8.2	4.2	19.9	17.2	4.8	29.5	28.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.9	84.5	98.1	42.5	165.2	48.3	50.5	127.2	104.3	45.7	159.8	205.3
LnGrp LOS	F	F	F	D	F	D	D	F	F	D	F	F
Approach Vol, veh/h		913			2255			2210			2916	
Approach Delay, s/veh		87.1			138.0			114.6			162.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	37.5	22.3	44.0	46.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	33.0	18.0	39.5	41.5
Max Q Clear Time (g_c+I1), s	35.0	17.7	41.5	43.5
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	134.8
HCM 6th LOS	F

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	80	436	28	385	462	39	92	740	407	79	1108	95
Future Volume (veh/h)	80	436	28	385	462	39	92	740	407	79	1108	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	474	30	418	502	42	100	804	442	86	1204	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	696	310	410	1291	576	163	1130	526	110	1148	98
Arrive On Green	0.06	0.20	0.20	0.23	0.36	0.36	0.05	0.33	0.33	0.06	0.35	0.35
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3404	1585	1781	3313	283
Grp Volume(v), veh/h	87	474	30	418	502	42	100	804	442	86	645	662
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1781	1777	1819
Q Serve(g_s), s	4.8	12.3	1.5	22.9	10.4	1.7	2.8	20.6	25.7	4.7	34.5	34.5
Cycle Q Clear(g_c), s	4.8	12.3	1.5	22.9	10.4	1.7	2.8	20.6	25.7	4.7	34.5	34.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	111	696	310	410	1291	576	163	1130	526	110	616	630
V/C Ratio(X)	0.78	0.68	0.10	1.02	0.39	0.07	0.62	0.71	0.84	0.78	1.05	1.05
Avail Cap(c_a), veh/h	188	696	310	410	1291	576	177	1130	526	138	616	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	37.2	32.8	38.3	23.5	20.7	46.6	29.1	30.8	46.1	32.5	32.5
Incr Delay (d2), s/veh	11.2	5.3	0.6	49.8	0.9	0.2	5.5	2.1	11.6	20.3	49.3	49.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.7	0.6	15.2	4.3	0.7	1.3	8.5	11.3	2.7	22.7	23.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	42.5	33.4	88.1	24.4	21.0	52.0	31.2	42.4	66.4	81.8	82.4
LnGrp LOS	E	D	C	F	C	C	D	C	D	E	F	F
Approach Vol, veh/h		591			962			1346			1393	
Approach Delay, s/veh		44.2			51.9			36.4			81.2	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	40.7	10.6	37.6	27.4	24.0	9.2	39.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	31.9	7.7	31.9	22.9	19.5	5.1	34.5
Max Q Clear Time (g_c+I1), s	6.8	12.4	6.7	27.7	24.9	14.3	4.8	36.5
Green Ext Time (p_c), s	0.1	3.1	0.0	2.8	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	55.5
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	245	1060	305	131	67	594	1579	229	103	900	24
Future Volume (veh/h)	28	245	1060	305	131	67	594	1579	229	103	900	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	266	1152	332	142	73	646	1716	249	112	978	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	1165	560	185	572	560	528	1724	769	116	897	24
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.30	0.49	0.49	0.07	0.25	0.25
Sat Flow, veh/h	119	3296	1585	379	1617	1585	1781	3554	1585	1781	3536	94
Grp Volume(v), veh/h	296	0	1152	332	142	73	646	1716	249	112	491	513
Grp Sat Flow(s),veh/h/ln	1798	1617	1585	379	1617	1585	1781	1777	1585	1781	1777	1853
Q Serve(g_s), s	0.6	0.0	49.5	49.5	8.7	4.4	41.5	67.3	13.4	8.8	35.5	35.5
Cycle Q Clear(g_c), s	17.1	0.0	49.5	49.5	8.7	4.4	41.5	67.3	13.4	8.8	35.5	35.5
Prop In Lane	0.10		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	664	572	560	185	572	560	528	1724	769	116	451	470
V/C Ratio(X)	0.45	0.00	2.06	1.79	0.25	0.13	1.22	1.00	0.32	0.97	1.09	1.09
Avail Cap(c_a), veh/h	664	572	560	185	572	560	528	1724	769	116	451	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	45.3	52.1	32.1	30.7	49.3	35.9	22.0	65.3	52.3	52.3
Incr Delay (d2), s/veh	0.5	0.0	481.2	377.1	0.2	0.1	116.6	20.7	1.1	73.1	69.2	68.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	94.2	26.1	3.5	1.7	35.1	32.6	5.2	6.3	24.1	25.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	0.0	526.4	429.2	32.3	30.8	165.9	56.6	23.1	138.4	121.4	120.6
LnGrp LOS	D	A	F	F	C	C	F	E	C	F	F	F
Approach Vol, veh/h		1448			547			2611			1116	
Approach Delay, s/veh		426.0			273.0			80.4			122.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	72.4		54.0	46.0	40.0		54.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	9.1	67.9		49.5	41.5	35.5		49.5
Max Q Clear Time (g_c+I1), s	10.8	69.3		51.5	43.5	37.5		51.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		194.5
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	2145	212	0	1441	485	552	1021	5	149	1346	4
Future Volume (veh/h)	0	2145	212	0	1441	485	552	1021	5	149	1346	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	2332	230	0	1566	527	600	1110	5	162	1463	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	2166	210	0	1626	725	545	1748	8	188	1476	4
Arrive On Green	0.00	0.46	0.46	0.00	0.46	0.46	0.16	0.33	0.33	0.11	0.28	0.28
Sat Flow, veh/h	0	4902	458	0	3647	1585	3456	5247	24	1781	5257	14
Grp Volume(v), veh/h	0	1665	897	0	1566	527	600	720	395	162	947	520
Grp Sat Flow(s),veh/h/ln	0	1702	1788	0	1777	1585	1728	1702	1866	1781	1702	1868
Q Serve(g_s), s	0.0	59.5	59.5	0.0	55.5	35.1	20.5	23.3	23.3	11.6	36.1	36.1
Cycle Q Clear(g_c), s	0.0	59.5	59.5	0.0	55.5	35.1	20.5	23.3	23.3	11.6	36.1	36.1
Prop In Lane	0.00		0.26	0.00		1.00	1.00		0.01	1.00		0.01
Lane Grp Cap(c), veh/h	0	1558	818	0	1626	725	545	1134	622	188	956	524
V/C Ratio(X)	0.00	1.07	1.10	0.00	0.96	0.73	1.10	0.64	0.64	0.86	0.99	0.99
Avail Cap(c_a), veh/h	0	1558	818	0	1626	725	545	1134	622	221	956	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	35.3	35.3	0.0	34.2	28.6	54.7	36.7	36.7	57.2	46.6	46.6
Incr Delay (d2), s/veh	0.0	43.6	61.1	0.0	14.5	3.7	69.1	2.7	4.9	25.2	27.0	37.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	32.7	38.4	0.0	26.0	30.1	14.0	9.9	11.2	6.5	18.4	21.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	78.9	96.3	0.0	48.6	32.3	123.9	39.4	41.6	82.4	73.6	83.8
LnGrp LOS	A	F	F	A	D	C	F	D	D	F	E	F
Approach Vol, veh/h		2562			2093			1715			1629	
Approach Delay, s/veh		85.0			44.5			69.4			77.7	
Approach LOS		F			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	41.0		64.0	18.2	47.8		64.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.5	36.5		59.5	16.1	40.9		59.5
Max Q Clear Time (g_c+I1), s	22.5	38.1		61.5	13.6	25.3		57.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	6.3		1.7

Intersection Summary	
HCM 6th Ctrl Delay	69.6
HCM 6th LOS	E

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	112	488	84	276	140	0	90	1108	43	29	1471	363
Future Volume (veh/h)	112	488	84	276	140	0	90	1108	43	29	1471	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	530	91	300	152	0	98	1204	47	32	1599	395
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	533	619	276	369	846		139	2750	107	245	2785	865
Arrive On Green	0.17	0.17	0.17	0.16	0.17	0.00	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1781	3554	1585	1781	5106	1585	217	5042	197	444	5106	1585
Grp Volume(v), veh/h	122	530	91	300	152	0	98	813	438	32	1599	395
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1702	1585	217	1702	1835	444	1702	1585
Q Serve(g_s), s	5.4	15.8	5.5	15.0	2.8	0.0	36.9	15.5	15.6	5.1	22.6	16.5
Cycle Q Clear(g_c), s	5.4	15.8	5.5	15.0	2.8	0.0	59.5	15.5	15.6	20.6	22.6	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	533	619	276	369	846		139	1857	1001	245	2785	865
V/C Ratio(X)	0.23	0.86	0.33	0.81	0.18		0.70	0.44	0.44	0.13	0.57	0.46
Avail Cap(c_a), veh/h	533	619	276	384	889		139	1857	1001	245	2785	865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	43.7	39.5	31.5	39.1	0.0	40.7	14.8	14.8	21.0	16.4	15.0
Incr Delay (d2), s/veh	1.0	14.2	3.2	12.3	0.1	0.0	14.8	0.2	0.3	0.2	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.1	2.4	7.6	1.2	0.0	3.3	5.8	6.4	0.5	8.5	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	57.9	42.6	43.8	39.2	0.0	55.5	15.0	15.1	21.2	16.7	15.4
LnGrp LOS	C	E	D	D	D		E	B	B	C	B	B
Approach Vol, veh/h		743			452	A		1349			2026	
Approach Delay, s/veh		51.0			42.2			18.0			16.5	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.6	23.5		64.0	22.5	22.6		64.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.0	19.0		59.5	18.0	19.0		59.5
Max Q Clear Time (g_c+I1), s	17.0	17.8		61.5	7.4	4.8		24.6
Green Ext Time (p_c), s	0.1	0.5		0.0	0.2	0.7		19.6

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	304	1467	575	381	1105	365	289	1092	199	412	1348	373
Future Volume (veh/h)	304	1467	575	381	1105	365	289	1092	199	412	1348	373
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	330	1700	555	414	1201	397	314	1187	216	448	1465	405
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	1753	495	360	1569	487	274	1494	464	487	1411	387
Arrive On Green	0.11	0.31	0.31	0.10	0.31	0.31	0.08	0.29	0.29	0.14	0.35	0.35
Sat Flow, veh/h	3563	5611	1585	3456	5106	1585	3456	5106	1585	3456	3984	1094
Grp Volume(v), veh/h	330	1700	555	414	1201	397	314	1187	216	448	1250	620
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1702	1585	1728	1702	1585	1728	1702	1674
Q Serve(g_s), s	10.9	35.9	37.5	12.5	25.6	27.8	9.5	25.7	13.4	15.4	42.5	42.5
Cycle Q Clear(g_c), s	10.9	35.9	37.5	12.5	25.6	27.8	9.5	25.7	13.4	15.4	42.5	42.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	389	1753	495	360	1569	487	274	1494	464	487	1206	593
V/C Ratio(X)	0.85	0.97	1.12	1.15	0.77	0.81	1.15	0.79	0.47	0.92	1.04	1.05
Avail Cap(c_a), veh/h	433	1753	495	360	1569	487	274	1494	464	487	1206	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	40.7	41.2	53.8	37.6	38.4	55.3	39.1	34.8	50.9	38.8	38.8
Incr Delay (d2), s/veh	13.4	14.9	77.8	94.8	2.3	10.3	100.4	4.5	3.3	22.9	36.0	49.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	18.0	24.5	10.0	10.5	11.6	7.9	11.0	5.4	8.1	23.0	24.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.9	55.6	119.0	148.6	39.9	48.7	155.6	43.6	38.1	73.8	74.8	88.2
LnGrp LOS	E	E	F	F	D	D	F	D	D	E	F	F
Approach Vol, veh/h		2585			2012			1717			2318	
Approach Delay, s/veh		70.5			64.0			63.4			78.2	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	47.0	17.0	42.0	21.4	39.6	17.6	41.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	42.5	12.5	37.5	16.9	35.1	14.6	35.4
Max Q Clear Time (g_c+I1), s	11.5	44.5	14.5	39.5	17.4	27.7	12.9	29.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.6	0.2	3.8

Intersection Summary	
HCM 6th Ctrl Delay	69.6
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1085	134	0	1245	449	0	0	91	546	98	804
Future Volume (vph)	0	1085	134	0	1245	449	0	0	91	546	98	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor		0.86			0.91	1.00			1.00	0.97	0.91	0.91
Frt		0.98			1.00	0.85			0.86	1.00	0.88	0.85
Flt Protected		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (prot)		6302			5085	1583			1611	3433	2982	1441
Flt Permitted		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (perm)		6302			5085	1583			1611	3433	2982	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1179	146	0	1353	488	0	0	99	593	107	874
RTOR Reduction (vph)	0	34	0	0	0	342	0	0	71	0	1	11
Lane Group Flow (vph)	0	1291	0	0	1353	146	0	0	28	593	543	426
Turn Type		NA			NA	Perm			Perm	Prot	NA	Perm
Protected Phases		4			8					1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)		19.5			19.5	19.5			18.7	13.3	36.5	36.5
Effective Green, g (s)		19.5			19.5	19.5			18.7	13.3	36.5	36.5
Actuated g/C Ratio		0.30			0.30	0.30			0.29	0.20	0.56	0.56
Clearance Time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1890			1525	474			463	702	1674	809
v/s Ratio Prot		0.20			c0.27					c0.17	0.18	
v/s Ratio Perm						0.09			0.02			c0.30
v/c Ratio		0.68			0.89	0.31			0.06	0.84	0.32	0.53
Uniform Delay, d1		20.0			21.7	17.6			16.8	24.9	7.6	8.9
Progression Factor		1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0			6.6	0.4			0.3	9.2	0.5	2.4
Delay (s)		21.1			28.3	17.9			17.0	34.0	8.2	11.3
Level of Service		C			C	B			B	C	A	B
Approach Delay (s)		21.1			25.6			17.0			18.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1454	0	0	1358	940	482	0	364	0	0	0
Future Volume (vph)	0	1454	0	0	1358	940	482	0	364	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5	4.5		4.5			
Lane Util. Factor		0.86			0.95	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		6408			3539	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		6408			3539	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1580	0	0	1476	1022	524	0	396	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	468	0	0	25	0	0	0
Lane Group Flow (vph)	0	1580	0	0	1476	554	524	0	371	0	0	0
Turn Type		NA			NA	Perm	Perm		Perm			
Protected Phases		4			8							
Permitted Phases						8	2		2			
Actuated Green, G (s)		32.5			32.5	32.5	18.5		18.5			
Effective Green, g (s)		32.5			32.5	32.5	18.5		18.5			
Actuated g/C Ratio		0.54			0.54	0.54	0.31		0.31			
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		3471			1916	857	1058		859			
v/s Ratio Prot		0.25			c0.42							
v/s Ratio Perm						0.35	c0.15		0.13			
v/c Ratio		0.46			0.77	0.65	0.50		0.43			
Uniform Delay, d1		8.4			10.8	9.7	16.9		16.6			
Progression Factor		1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.1			2.0	1.7	1.7		1.6			
Delay (s)		8.5			12.8	11.4	18.6		18.1			
Level of Service		A			B	B	B		B			
Approach Delay (s)		8.5			12.2			18.4			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1322	169	105	1224	198	238	555	162	296	621	168
Future Volume (veh/h)	107	1322	169	105	1224	198	238	555	162	296	621	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	1437	184	114	1330	215	259	603	176	322	675	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	2091	268	155	1467	237	212	822	367	256	911	406
Arrive On Green	0.07	0.46	0.46	0.33	0.33	0.33	0.12	0.23	0.23	0.14	0.26	0.26
Sat Flow, veh/h	1781	4582	586	311	4430	716	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	116	1067	554	114	1022	523	259	603	176	322	675	183
Grp Sat Flow(s),veh/h/ln	1781	1702	1765	311	1702	1741	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.2	19.9	19.9	16.6	23.0	23.0	9.5	12.6	7.7	11.5	14.0	7.8
Cycle Q Clear(g_c), s	5.2	19.9	19.9	26.5	23.0	23.0	9.5	12.6	7.7	11.5	14.0	7.8
Prop In Lane	1.00		0.33	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	1553	805	155	1128	577	212	822	367	256	911	406
V/C Ratio(X)	0.95	0.69	0.69	0.74	0.91	0.91	1.22	0.73	0.48	1.26	0.74	0.45
Avail Cap(c_a), veh/h	122	1553	805	155	1128	577	212	822	367	256	911	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	17.2	17.2	35.3	25.6	25.6	35.2	28.5	26.6	34.3	27.3	25.0
Incr Delay (d2), s/veh	64.9	1.3	2.5	16.8	10.5	18.1	135.6	5.8	4.5	143.6	5.4	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	7.6	8.1	2.9	10.6	12.0	12.0	5.9	3.3	15.1	6.5	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.0	18.5	19.7	52.1	36.1	43.6	170.8	34.2	31.0	177.8	32.7	28.6
LnGrp LOS	F	B	B	D	D	D	F	C	C	F	C	C
Approach Vol, veh/h		1737			1659			1038			1180	
Approach Delay, s/veh		24.5			39.6			67.8			71.7	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	23.0		41.0	14.0	25.0	10.0	31.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	18.5		36.5	9.5	20.5	5.5	26.5
Max Q Clear Time (g_c+I1), s	13.5	14.6		21.9	11.5	16.0	7.2	28.5
Green Ext Time (p_c), s	0.0	1.8		9.8	0.0	2.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1190	294	217	658	0	518	0	467	2	0	2
Future Volume (veh/h)	0	1190	294	217	658	0	518	0	467	2	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1293	320	236	715	0	563	0	508	2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1244	555	253	1682	0	574	0	1353	170	19	129
Arrive On Green	0.00	0.35	0.35	0.07	0.47	0.00	0.16	0.00	0.43	0.22	0.00	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3647	0	3563	0	3170	512	88	600
Grp Volume(v), veh/h	0	1293	320	236	715	0	563	0	508	4	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	0	1781	0	1585	1200	0	0
Q Serve(g_s), s	0.0	31.5	14.8	6.1	11.9	0.0	14.2	0.0	9.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	31.5	14.8	6.1	11.9	0.0	14.2	0.0	9.8	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.50		0.50
Lane Grp Cap(c), veh/h	2	1244	555	253	1682	0	574	0	1353	319	0	0
V/C Ratio(X)	0.00	1.04	0.58	0.93	0.43	0.00	0.98	0.00	0.38	0.01	0.00	0.00
Avail Cap(c_a), veh/h	99	1244	555	253	1682	0	574	0	1353	319	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	29.3	23.8	41.5	15.6	0.0	37.6	0.0	17.6	27.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	36.4	1.5	38.3	0.2	0.0	32.6	0.0	0.8	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	19.3	5.7	3.9	4.7	0.0	8.7	0.0	3.7	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	65.7	25.3	79.8	15.8	0.0	70.2	0.0	18.4	27.8	0.0	0.0
LnGrp LOS	A	F	C	E	B	A	E	A	B	C	A	A
Approach Vol, veh/h		1613			951			1071			4	
Approach Delay, s/veh		57.6			31.7			45.6			27.8	
Approach LOS		E			C			D			C	

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		42.9	11.1	36.0	19.0	23.9	0.0	47.1
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s		38.4	6.6	31.5	14.5	19.4	5.0	33.1
Max Q Clear Time (g_c+I1), s		11.8	8.1	33.5	16.2	2.2	0.0	13.9
Green Ext Time (p_c), s		2.2	0.0	0.0	0.0	0.0	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	1110	43	63	868	74	230	702	114	191	276	106
Future Volume (veh/h)	109	1110	43	63	868	74	230	702	114	191	276	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	1207	47	68	943	80	250	763	124	208	300	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1319	588	87	1125	95	469	936	417	285	405	152
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.26	0.26	0.26	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3315	281	1781	3554	1585	1781	2528	949
Grp Volume(v), veh/h	118	1207	47	68	505	518	250	763	124	208	209	206
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1820	1781	1777	1585	1781	1777	1700
Q Serve(g_s), s	7.5	37.2	2.2	4.3	30.2	30.2	13.8	23.2	7.2	12.8	12.9	13.3
Cycle Q Clear(g_c), s	7.5	37.2	2.2	4.3	30.2	30.2	13.8	23.2	7.2	12.8	12.9	13.3
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	144	1319	588	87	603	617	469	936	417	285	285	272
V/C Ratio(X)	0.82	0.92	0.08	0.78	0.84	0.84	0.53	0.82	0.30	0.73	0.73	0.76
Avail Cap(c_a), veh/h	153	1374	613	88	622	637	469	936	417	642	641	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	34.5	23.4	54.1	35.1	35.1	36.3	39.8	33.9	45.9	46.0	46.2
Incr Delay (d2), s/veh	27.3	9.5	0.1	34.9	9.7	9.5	4.3	7.8	1.8	3.6	3.7	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	17.3	0.8	2.8	14.3	14.6	6.5	10.9	3.0	5.9	5.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.3	44.0	23.5	89.0	44.8	44.6	40.6	47.5	35.7	49.5	49.6	50.4
LnGrp LOS	E	D	C	F	D	D	D	D	D	D	D	D
Approach Vol, veh/h		1372			1091			1137			623	
Approach Delay, s/veh		46.3			47.4			44.7			49.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		34.8	10.1	47.2		22.9	13.8	43.5
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		30.3	5.7	44.5		41.5	9.9	40.3
Max Q Clear Time (g_c+I1), s		25.2	6.3	39.2		15.3	9.5	32.2
Green Ext Time (p_c), s		2.8	0.0	3.5		3.1	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	1685	112	82	805	113	107	585	127	113	455	86
Future Volume (veh/h)	102	1685	112	82	805	113	107	585	127	113	455	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	1832	122	89	875	123	116	636	138	123	495	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	1948	129	114	1728	242	272	949	206	208	976	183
Arrive On Green	0.08	0.40	0.40	0.06	0.38	0.38	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1781	4891	325	1781	4527	633	828	2905	629	696	2988	559
Grp Volume(v), veh/h	111	1274	680	89	657	341	116	389	385	123	293	295
Grp Sat Flow(s),veh/h/ln	1781	1702	1812	1781	1702	1756	828	1777	1757	696	1777	1770
Q Serve(g_s), s	3.9	23.0	23.1	3.1	9.5	9.5	8.4	12.1	12.1	8.8	8.5	8.6
Cycle Q Clear(g_c), s	3.9	23.0	23.1	3.1	9.5	9.5	17.0	12.1	12.1	20.9	8.5	8.6
Prop In Lane	1.00		0.18	1.00		0.36	1.00		0.36	1.00		0.32
Lane Grp Cap(c), veh/h	143	1355	721	114	1299	670	272	581	574	208	581	578
V/C Ratio(X)	0.77	0.94	0.94	0.78	0.51	0.51	0.43	0.67	0.67	0.59	0.51	0.51
Avail Cap(c_a), veh/h	265	1357	722	142	1299	670	272	581	574	208	581	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	18.5	18.5	29.5	15.2	15.2	24.3	18.6	18.6	28.5	17.4	17.4
Incr Delay (d2), s/veh	8.6	12.7	20.7	19.5	0.3	0.6	4.8	6.0	6.1	11.7	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	9.9	12.2	1.9	3.2	3.3	1.9	5.5	5.5	2.5	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	31.2	39.3	49.0	15.5	15.8	29.1	24.6	24.7	40.2	20.5	20.6
LnGrp LOS	D	C	D	D	B	B	C	C	C	D	C	C
Approach Vol, veh/h		2065			1087			890			711	
Approach Delay, s/veh		34.2			18.3			25.2			23.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.4	8.6	30.0		25.4	9.6	28.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.9	5.1	25.5		20.9	9.5	21.1				
Max Q Clear Time (g_c+I1), s		19.0	5.1	25.1		22.9	5.9	11.5				
Green Ext Time (p_c), s		1.0	0.0	0.3		0.0	0.1	4.2				

Intersection Summary	
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	1595	104	125	831	120	143	652	90	190	601	128
Future Volume (veh/h)	205	1595	104	125	831	120	143	652	90	190	601	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	223	1734	113	136	903	130	155	709	98	207	653	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1791	117	158	1394	200	180	770	343	230	869	387
Arrive On Green	0.15	0.37	0.37	0.09	0.31	0.31	0.10	0.22	0.22	0.13	0.24	0.24
Sat Flow, veh/h	1781	4898	319	1781	4511	647	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	223	1204	643	136	681	352	155	709	98	207	653	139
Grp Sat Flow(s),veh/h/ln	1781	1702	1813	1781	1702	1754	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.0	31.3	31.4	6.8	15.5	15.6	7.7	17.6	4.6	10.3	15.3	6.5
Cycle Q Clear(g_c), s	11.0	31.3	31.4	6.8	15.5	15.6	7.7	17.6	4.6	10.3	15.3	6.5
Prop In Lane	1.00		0.18	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	1244	663	158	1052	542	180	770	343	230	869	387
V/C Ratio(X)	0.86	0.97	0.97	0.86	0.65	0.65	0.86	0.92	0.29	0.90	0.75	0.36
Avail Cap(c_a), veh/h	303	1244	663	158	1052	542	180	770	343	230	869	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	28.0	28.1	40.4	26.9	26.9	39.8	34.5	29.4	38.6	31.5	28.2
Incr Delay (d2), s/veh	19.2	18.3	27.5	34.8	1.4	2.7	31.9	18.0	2.1	34.3	6.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	15.0	17.8	4.4	6.2	6.7	4.9	9.3	1.9	6.6	7.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	46.3	55.6	75.3	28.3	29.6	71.8	52.5	31.5	72.9	37.4	30.7
LnGrp LOS	E	D	E	E	C	C	E	D	C	E	D	C
Approach Vol, veh/h		2070			1169			962			999	
Approach Delay, s/veh		50.3			34.1			53.5			43.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	24.0	12.5	37.4	13.6	26.5	17.6	32.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.6	19.5	8.0	32.9	9.1	22.0	15.3	25.6
Max Q Clear Time (g_c+I1), s	12.3	19.6	8.8	33.4	9.7	17.3	13.0	17.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.0	0.1	4.0

Intersection Summary	
HCM 6th Ctrl Delay	46.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	296	0	521	337	795	0	0	1164	153
Future Volume (veh/h)	0	0	0	296	0	521	337	795	0	0	1164	153
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				322	0	566	366	864	0	0	1265	166
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1178	0	524	452	1886	0	0	1511	198
Arrive On Green				0.33	0.00	0.33	0.13	0.53	0.00	0.00	0.33	0.33
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	4736	599
Grp Volume(v), veh/h				322	0	566	366	864	0	0	943	488
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1762
Q Serve(g_s), s				4.3	0.0	21.5	6.7	9.8	0.0	0.0	16.7	16.7
Cycle Q Clear(g_c), s				4.3	0.0	21.5	6.7	9.8	0.0	0.0	16.7	16.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.34
Lane Grp Cap(c), veh/h				1178	0	524	452	1886	0	0	1126	583
V/C Ratio(X)				0.27	0.00	1.08	0.81	0.46	0.00	0.00	0.84	0.84
Avail Cap(c_a), veh/h				1178	0	524	452	1886	0	0	1126	583
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.0	0.0	21.8	27.5	9.5	0.0	0.0	20.1	20.1
Incr Delay (d2), s/veh				0.1	0.0	62.5	10.6	0.8	0.0	0.0	7.5	13.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	15.8	3.3	3.4	0.0	0.0	7.2	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.1	0.0	84.2	38.1	10.3	0.0	0.0	27.6	33.6
LnGrp LOS				B	A	F	D	B	A	A	C	C
Approach Vol, veh/h					888			1230			1431	
Approach Delay, s/veh					59.5			18.5			29.6	
Approach LOS					E			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		39.0			13.0	26.0		26.0				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		34.5			8.5	21.5		21.5				
Max Q Clear Time (g_c+I1), s		11.8			8.7	18.7		23.5				
Green Ext Time (p_c), s		6.5			0.0	2.2		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	0	631	0	0	0	0	995	378	439	1018	0
Future Volume (veh/h)	214	0	631	0	0	0	0	995	378	439	1018	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	155	0	769				0	1082	411	477	1107	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	458	0	815				0	1375	613	563	2183	0
Arrive On Green	0.26	0.00	0.26				0.00	0.39	0.39	0.16	0.61	0.00
Sat Flow, veh/h	1781	0	3170				0	3647	1585	3456	3647	0
Grp Volume(v), veh/h	155	0	769				0	1082	411	477	1107	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1728	1777	0
Q Serve(g_s), s	5.0	0.0	16.7				0.0	18.8	15.0	9.4	12.2	0.0
Cycle Q Clear(g_c), s	5.0	0.0	16.7				0.0	18.8	15.0	9.4	12.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	458	0	815				0	1375	613	563	2183	0
V/C Ratio(X)	0.34	0.00	0.94				0.00	0.79	0.67	0.85	0.51	0.00
Avail Cap(c_a), veh/h	458	0	815				0	1375	613	568	2183	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.2	0.0	25.5				0.0	18.9	17.8	28.4	7.6	0.0
Incr Delay (d2), s/veh	0.4	0.0	19.1				0.0	4.6	5.7	11.4	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	7.8				0.0	7.9	6.0	4.6	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	44.6				0.0	23.5	23.5	39.8	8.4	0.0
LnGrp LOS	C	A	D				A	C	C	D	A	A
Approach Vol, veh/h		924						1493			1584	
Approach Delay, s/veh		40.8						23.5			17.9	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.9	31.6		22.5		47.5
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	11.5	27.0		18.0		43.0
Max Q Clear Time (g_c+I1), s	11.4	20.8		18.7		14.2
Green Ext Time (p_c), s	0.0	4.3		0.0		9.6

Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	17	63	139	16	181	29	1230	283	91	854	15
Future Volume (veh/h)	18	17	63	139	16	181	29	1230	283	91	854	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	18	68	151	17	197	32	1337	308	99	928	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	68	159	250	20	288	433	2015	456	211	2502	43
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	105	338	794	872	98	1442	594	2879	651	304	3574	62
Grp Volume(v), veh/h	106	0	0	168	0	197	32	816	829	99	461	483
Grp Sat Flow(s),veh/h/ln	1238	0	0	970	0	1442	594	1777	1753	304	1777	1859
Q Serve(g_s), s	0.3	0.0	0.0	4.3	0.0	11.4	2.1	22.9	24.2	24.7	9.5	9.5
Cycle Q Clear(g_c), s	11.7	0.0	0.0	16.0	0.0	11.4	11.5	22.9	24.2	49.0	9.5	9.5
Prop In Lane	0.19		0.64	0.90		1.00	1.00		0.37	1.00		0.03
Lane Grp Cap(c), veh/h	295	0	0	270	0	288	433	1244	1227	211	1244	1301
V/C Ratio(X)	0.36	0.00	0.00	0.62	0.00	0.68	0.07	0.66	0.68	0.47	0.37	0.37
Avail Cap(c_a), veh/h	295	0	0	270	0	288	433	1244	1227	211	1244	1301
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	0.0	0.0	36.2	0.0	33.4	7.8	7.5	7.7	21.6	5.5	5.5
Incr Delay (d2), s/veh	0.7	0.0	0.0	4.4	0.0	6.5	0.3	2.7	3.0	7.3	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	3.9	0.0	4.4	0.3	7.9	8.3	2.1	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	0.0	0.0	40.6	0.0	39.8	8.1	10.2	10.7	28.9	6.3	6.3
LnGrp LOS	C	A	A	D	A	D	A	B	B	C	A	A
Approach Vol, veh/h		106			365			1677			1043	
Approach Delay, s/veh		31.6			40.2			10.4			8.5	
Approach LOS		C			D			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	67.5	22.5	67.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	63.0	18.0	63.0	18.0
Max Q Clear Time (g_c+I1), s	26.2	13.7	51.0	18.0
Green Ext Time (p_c), s	18.4	0.2	6.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (veh/h)	306	309	0	1227	266	2	1032	242	0	0
Future Volume (veh/h)	306	309	0	1227	266	2	1032	242	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	333	336	0	1334	289	2	1122	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	0	2	2	2	2	2		
Cap, veh/h	475	422	0	2322	503	73	1924			
Arrive On Green	0.27	0.27	0.00	0.55	0.55	0.55	0.55	0.00		
Sat Flow, veh/h	1781	1585	0	4370	909	1	3482	1585		
Grp Volume(v), veh/h	333	336	0	1081	542	602	522	0		
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1702	1707	1866	1617	1585		
Q Serve(g_s), s	8.4	9.8	0.0	10.4	10.4	0.0	10.6	0.0		
Cycle Q Clear(g_c), s	8.4	9.8	0.0	10.4	10.4	10.6	10.6	0.0		
Prop In Lane	1.00	1.00	0.00		0.53	0.00		1.00		
Lane Grp Cap(c), veh/h	475	422	0	1881	943	1104	894			
V/C Ratio(X)	0.70	0.80	0.00	0.57	0.58	0.55	0.58			
Avail Cap(c_a), veh/h	662	589	0	1881	943	1104	894			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	16.5	17.0	0.0	7.3	7.3	7.3	7.4	0.0		
Incr Delay (d2), s/veh	1.9	5.1	0.0	1.3	2.5	1.9	2.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.3	3.8	0.0	2.9	3.3	3.5	3.2	0.0		
Unsig. Movement Delay, s/veh										
LnGrp Delay(d),s/veh	18.4	22.1	0.0	8.6	9.8	9.3	10.1	0.0		
LnGrp LOS	B	C	A	A	A	A	B			
Approach Vol, veh/h	669			1623			1124	A		
Approach Delay, s/veh	20.3			9.0			9.7			
Approach LOS	C			A			A			

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		32.0		17.8		32.0
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		27.5		18.5		27.5
Max Q Clear Time (g_c+I1), s		12.4		11.8		12.6
Green Ext Time (p_c), s		9.8		1.4		6.6

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1610	157	131	914	83	143	725	203	107	626	100
Future Volume (veh/h)	81	1610	157	131	914	83	143	725	203	107	626	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	1750	171	142	993	90	155	788	221	116	680	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1744	170	160	1882	170	223	1324	590	198	1143	183
Arrive On Green	0.06	0.37	0.37	0.09	0.39	0.39	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	4731	461	1781	4766	431	687	3554	1585	559	3068	491
Grp Volume(v), veh/h	88	1258	663	142	709	374	155	788	221	116	394	395
Grp Sat Flow(s),veh/h/ln	1781	1702	1787	1781	1702	1793	687	1777	1585	559	1777	1782
Q Serve(g_s), s	3.9	29.5	29.5	6.3	12.7	12.8	15.5	14.3	8.1	15.5	14.3	14.3
Cycle Q Clear(g_c), s	3.9	29.5	29.5	6.3	12.7	12.8	29.8	14.3	8.1	29.8	14.3	14.3
Prop In Lane	1.00		0.26	1.00		0.24	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	114	1255	659	160	1345	708	223	1324	590	198	662	664
V/C Ratio(X)	0.77	1.00	1.01	0.89	0.53	0.53	0.70	0.60	0.37	0.59	0.59	0.60
Avail Cap(c_a), veh/h	207	1255	659	160	1345	708	223	1324	590	198	662	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	25.2	25.3	36.0	18.5	18.5	33.4	20.2	18.3	32.8	20.2	20.2
Incr Delay (d2), s/veh	10.7	25.9	36.6	40.1	0.4	0.7	16.5	2.0	1.8	12.0	3.9	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	15.4	18.1	4.4	4.7	5.0	4.0	6.0	3.1	2.9	6.3	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.5	51.1	61.9	76.1	18.9	19.2	49.8	22.2	20.1	44.8	24.1	24.2
LnGrp LOS	D	F	F	E	B	B	D	C	C	D	C	C
Approach Vol, veh/h		2009			1225			1164			905	
Approach Delay, s/veh		54.5			25.6			25.5			26.8	
Approach LOS		D			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.3	11.7	34.0		34.3	9.6	36.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		29.8	7.2	29.5		29.8	9.3	27.4				
Max Q Clear Time (g_c+I1), s		31.8	8.3	31.5		31.8	5.9	14.8				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	5.6				

Intersection Summary	
HCM 6th Ctrl Delay	36.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	1732	117	169	933	149	88	513	319	95	578	126
Future Volume (veh/h)	101	1732	117	169	933	149	88	513	319	95	578	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	1883	127	184	1014	162	96	558	347	103	628	137
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	2054	138	221	2066	329	183	1012	451	184	1012	451
Arrive On Green	0.08	0.42	0.42	0.12	0.47	0.47	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	4887	329	1781	4439	708	702	3554	1585	616	3554	1585
Grp Volume(v), veh/h	110	1310	700	184	777	399	96	558	347	103	628	137
Grp Sat Flow(s),veh/h/ln	1781	1702	1811	1781	1702	1743	702	1777	1585	616	1777	1585
Q Serve(g_s), s	4.8	28.7	28.9	8.0	12.5	12.5	10.4	10.5	15.8	12.0	12.1	5.3
Cycle Q Clear(g_c), s	4.8	28.7	28.9	8.0	12.5	12.5	22.5	10.5	15.8	22.5	12.1	5.3
Prop In Lane	1.00		0.18	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	1430	761	221	1584	811	183	1012	451	184	1012	451
V/C Ratio(X)	0.78	0.92	0.92	0.83	0.49	0.49	0.52	0.55	0.77	0.56	0.62	0.30
Avail Cap(c_a), veh/h	237	1443	768	237	1584	811	183	1012	451	184	1012	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	21.6	21.7	33.8	14.6	14.6	34.5	24.0	25.9	34.1	24.6	22.1
Incr Delay (d2), s/veh	9.0	9.4	16.2	20.5	0.2	0.5	10.3	2.2	11.9	11.7	2.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	12.1	14.4	4.6	4.4	4.6	2.3	4.6	7.1	2.5	5.3	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	31.0	37.8	54.3	14.9	15.1	44.9	26.2	37.8	45.8	27.4	23.9
LnGrp LOS	D	C	D	D	B	B	D	C	D	D	C	C
Approach Vol, veh/h		2120			1360			1001			868	
Approach Delay, s/veh		33.9			20.3			32.0			29.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.0	14.3	37.7		27.0	10.8	41.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.5	10.5	33.5		22.5	10.5	33.5				
Max Q Clear Time (g_c+I1), s		24.5	10.0	30.9		24.5	6.8	14.5				
Green Ext Time (p_c), s		0.0	0.0	2.3		0.0	0.1	7.7				

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	1729	91	83	1096	190	64	473	37	223	676	246
Future Volume (veh/h)	242	1729	91	83	1096	190	64	473	37	223	676	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	263	1879	99	90	1191	207	70	514	40	242	735	267
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	297	2015	106	115	1327	231	216	743	58	339	1004	448
Arrive On Green	0.17	0.41	0.41	0.06	0.30	0.30	0.05	0.22	0.22	0.11	0.28	0.28
Sat Flow, veh/h	1781	4966	261	1781	4377	761	1781	3341	259	1781	3554	1585
Grp Volume(v), veh/h	263	1287	691	90	926	472	70	273	281	242	735	267
Grp Sat Flow(s),veh/h/ln	1781	1702	1823	1781	1702	1733	1781	1777	1824	1781	1777	1585
Q Serve(g_s), s	12.9	32.3	32.5	4.5	23.3	23.3	2.7	12.6	12.7	9.1	16.7	13.0
Cycle Q Clear(g_c), s	12.9	32.3	32.5	4.5	23.3	23.3	2.7	12.6	12.7	9.1	16.7	13.0
Prop In Lane	1.00		0.14	1.00		0.44	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	297	1381	740	115	1032	525	216	395	406	339	1004	448
V/C Ratio(X)	0.88	0.93	0.93	0.78	0.90	0.90	0.32	0.69	0.69	0.71	0.73	0.60
Avail Cap(c_a), veh/h	309	1389	744	121	1032	525	236	395	406	339	1004	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	25.4	25.4	41.2	29.8	29.8	25.7	31.9	32.0	23.5	29.0	27.7
Incr Delay (d2), s/veh	24.2	11.5	18.9	26.6	10.5	18.1	0.9	9.5	9.4	7.0	4.7	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	14.3	16.9	2.8	10.5	11.9	1.2	6.3	6.5	4.4	7.7	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.6	36.9	44.3	67.8	40.3	48.0	26.6	41.4	41.4	30.5	33.7	33.4
LnGrp LOS	E	D	D	E	D	D	C	D	D	C	C	C
Approach Vol, veh/h		2241			1488			624			1244	
Approach Delay, s/veh		42.0			44.4			39.7			33.0	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	24.4	10.3	40.8	8.6	29.8	19.4	31.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	19.9	6.1	36.5	5.1	24.3	15.5	27.1
Max Q Clear Time (g_c+I1), s	11.1	14.7	6.5	34.5	4.7	18.7	14.9	25.3
Green Ext Time (p_c), s	0.0	1.5	0.0	1.8	0.0	2.9	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	248	1462	21	294	1387	50	164	828	298	199	955	230
Future Volume (veh/h)	248	1462	21	294	1387	50	164	828	298	199	955	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	270	1589	23	320	1508	54	178	900	324	216	1038	250
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	1454	21	283	1467	53	281	852	306	239	1128	503
Arrive On Green	0.15	0.28	0.28	0.16	0.29	0.29	0.12	0.33	0.33	0.11	0.32	0.32
Sat Flow, veh/h	1781	5186	75	1781	5061	181	1781	2563	919	1781	3554	1585
Grp Volume(v), veh/h	270	1043	569	320	1014	548	178	623	601	216	1038	250
Grp Sat Flow(s),veh/h/ln	1781	1702	1857	1781	1702	1838	1781	1777	1705	1781	1777	1585
Q Serve(g_s), s	22.1	41.5	41.5	23.5	42.9	42.9	9.2	49.2	49.2	13.6	41.7	18.9
Cycle Q Clear(g_c), s	22.1	41.5	41.5	23.5	42.9	42.9	9.2	49.2	49.2	13.6	41.7	18.9
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.54	1.00		1.00
Lane Grp Cap(c), veh/h	266	955	521	283	987	533	281	591	567	239	1128	503
V/C Ratio(X)	1.01	1.09	1.09	1.13	1.03	1.03	0.63	1.05	1.06	0.91	0.92	0.50
Avail Cap(c_a), veh/h	266	955	521	283	987	533	281	591	567	265	1177	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	53.2	53.2	62.2	52.5	52.5	33.1	49.4	49.4	44.4	48.7	40.9
Incr Delay (d2), s/veh	59.1	57.7	67.0	93.6	36.0	46.3	10.5	52.1	54.8	30.0	11.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	25.1	28.7	17.9	22.9	26.3	4.7	29.9	29.1	9.9	19.9	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.0	111.0	120.3	155.9	88.5	98.9	43.5	101.5	104.2	74.4	60.1	41.7
LnGrp LOS	F	F	F	F	F	F	D	F	F	E	E	D
Approach Vol, veh/h		1882			1882			1402			1504	
Approach Delay, s/veh		115.4			103.0			95.3			59.1	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	53.7	28.0	46.0	22.5	51.5	26.6	47.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	49.0	23.5	41.5	18.0	49.0	22.1	42.9
Max Q Clear Time (g_c+I1), s	15.6	51.2	25.5	43.5	11.2	43.7	24.1	44.9
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.2	3.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	95.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	1275	160	267	1084	347	327	1257	305	287	806	208
Future Volume (veh/h)	229	1275	160	267	1084	347	327	1257	305	287	806	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	249	1386	174	290	1178	377	355	1366	332	312	876	226
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1263	159	248	1028	459	351	1245	302	274	924	412
Arrive On Green	0.13	0.28	0.28	0.14	0.29	0.29	0.20	0.30	0.30	0.15	0.26	0.26
Sat Flow, veh/h	1781	4594	577	1781	3554	1585	1781	4101	995	1781	3554	1585
Grp Volume(v), veh/h	249	1027	533	290	1178	377	355	1133	565	312	876	226
Grp Sat Flow(s),veh/h/ln	1781	1702	1767	1781	1777	1585	1781	1702	1691	1781	1777	1585
Q Serve(g_s), s	17.5	38.5	38.5	19.5	40.5	31.1	27.6	42.5	42.5	21.5	33.9	17.2
Cycle Q Clear(g_c), s	17.5	38.5	38.5	19.5	40.5	31.1	27.6	42.5	42.5	21.5	33.9	17.2
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	223	936	486	248	1028	459	351	1033	513	274	924	412
V/C Ratio(X)	1.12	1.10	1.10	1.17	1.15	0.82	1.01	1.10	1.10	1.14	0.95	0.55
Avail Cap(c_a), veh/h	223	936	486	248	1028	459	351	1033	513	274	924	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	50.8	50.8	60.3	49.7	46.4	56.2	48.7	48.8	59.3	50.9	44.7
Incr Delay (d2), s/veh	95.7	59.6	69.9	110.5	77.3	11.5	50.8	58.3	69.7	97.8	19.4	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	23.8	26.1	16.3	28.6	13.5	17.1	26.0	27.4	17.0	17.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	157.0	110.3	120.7	170.8	127.1	57.8	107.0	107.1	118.5	157.0	70.3	49.9
LnGrp LOS	F	F	F	F	F	E	F	F	F	F	E	D
Approach Vol, veh/h		1809			1845			2053			1414	
Approach Delay, s/veh		119.8			119.8			110.2			86.2	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	47.0	24.0	43.0	32.1	40.9	22.0	45.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	21.5	42.5	19.5	38.5	27.6	36.4	17.5	40.5
Max Q Clear Time (g_c+I1), s	23.5	44.5	21.5	40.5	29.6	35.9	19.5	42.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	110.4
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	1377	332	255	816	82	378	1369	432	118	969	124
Future Volume (veh/h)	321	1377	332	255	816	82	378	1369	432	118	969	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	349	1497	361	277	887	89	411	1488	470	128	1053	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	1560	484	326	1308	131	486	1617	502	148	1510	192
Arrive On Green	0.12	0.31	0.31	0.09	0.28	0.28	0.14	0.32	0.32	0.08	0.26	0.26
Sat Flow, veh/h	3456	5106	1585	3456	4718	472	3456	5106	1585	1781	5823	740
Grp Volume(v), veh/h	349	1497	361	277	639	337	411	1488	470	128	871	317
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1785	1728	1702	1585	1781	1609	1737
Q Serve(g_s), s	8.9	25.9	18.4	7.1	15.0	15.1	10.4	25.3	25.9	6.4	14.7	14.9
Cycle Q Clear(g_c), s	8.9	25.9	18.4	7.1	15.0	15.1	10.4	25.3	25.9	6.4	14.7	14.9
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	424	1560	484	326	944	495	486	1617	502	148	1251	450
V/C Ratio(X)	0.82	0.96	0.75	0.85	0.68	0.68	0.85	0.92	0.94	0.86	0.70	0.70
Avail Cap(c_a), veh/h	468	1560	484	326	944	495	530	1617	502	148	1251	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	30.7	28.1	40.1	28.9	29.0	37.7	29.7	29.9	40.7	30.1	30.2
Incr Delay (d2), s/veh	10.4	14.3	6.2	18.5	2.0	3.8	11.3	10.0	27.1	37.2	3.2	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	12.0	7.4	3.7	6.0	6.6	4.9	11.0	13.0	4.2	5.7	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	45.0	34.3	58.7	30.9	32.7	49.0	39.7	57.0	77.9	33.4	39.1
LnGrp LOS	D	D	C	E	C	C	D	D	E	E	C	D
Approach Vol, veh/h		2207			1253			2369			1316	
Approach Delay, s/veh		43.9			37.5			44.7			39.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.0	13.0	32.0	17.2	27.8	15.5	29.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	28.5	8.5	27.5	13.8	22.2	12.2	23.8
Max Q Clear Time (g_c+I1), s	8.4	27.9	9.1	27.9	12.4	16.9	10.9	17.1
Green Ext Time (p_c), s	0.0	0.5	0.0	0.0	0.2	3.1	0.2	3.2

Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1050	1438	302	284	543	313	63	1711	236	298	1833	514
Future Volume (veh/h)	1050	1438	302	284	543	313	63	1711	236	298	1833	514
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1141	1563	328	309	590	340	68	1860	257	324	1992	559
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	887	1086	227	415	613	190	806	1501	370	933	1379	753
Arrive On Green	0.26	0.26	0.26	0.12	0.12	0.12	0.23	0.23	0.23	0.27	0.27	0.27
Sat Flow, veh/h	3456	4233	883	3456	5106	1585	3456	6434	1585	3456	5106	2790
Grp Volume(v), veh/h	1141	1255	636	309	590	340	68	1860	257	324	1992	559
Grp Sat Flow(s),veh/h/ln	1728	1702	1711	1728	1702	1585	1728	1609	1585	1728	1702	1395
Q Serve(g_s), s	38.5	38.5	38.5	13.0	17.2	18.0	2.3	35.0	22.3	11.3	40.5	27.4
Cycle Q Clear(g_c), s	38.5	38.5	38.5	13.0	17.2	18.0	2.3	35.0	22.3	11.3	40.5	27.4
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	887	874	439	415	613	190	806	1501	370	933	1379	753
V/C Ratio(X)	1.29	1.44	1.45	0.75	0.96	1.79	0.08	1.24	0.69	0.35	1.44	0.74
Avail Cap(c_a), veh/h	887	874	439	415	613	190	806	1501	370	933	1379	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	55.8	55.8	63.8	65.7	66.0	45.0	57.5	52.6	44.1	54.8	50.0
Incr Delay (d2), s/veh	137.4	203.0	213.8	7.2	27.3	374.7	0.2	113.4	10.3	1.0	204.4	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.4	40.9	42.4	6.1	9.0	27.0	1.0	25.7	9.8	4.9	43.0	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	193.2	258.8	269.6	71.0	92.9	440.7	45.2	170.9	62.9	45.1	259.1	56.5
LnGrp LOS	F	F	F	E	F	F	D	F	E	D	F	E
Approach Vol, veh/h		3032			1239			2185			2875	
Approach Delay, s/veh		236.4			182.9			154.3			195.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	39.5	43.0	45.0	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	35.0	38.5	40.5	18.0
Max Q Clear Time (g_c+I1), s	37.0	40.5	42.5	20.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	197.5
HCM 6th LOS	F

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	123	652	51	423	589	70	125	1075	435	96	719	162
Future Volume (veh/h)	123	652	51	423	589	70	125	1075	435	96	719	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	709	55	460	640	76	136	1168	473	104	782	176
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	724	323	462	1318	588	194	1097	443	118	915	206
Arrive On Green	0.09	0.20	0.20	0.26	0.37	0.37	0.06	0.31	0.31	0.07	0.32	0.32
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3571	1443	1781	2882	649
Grp Volume(v), veh/h	134	709	55	460	640	76	136	1113	528	104	482	476
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1611	1781	1777	1754
Q Serve(g_s), s	8.1	21.8	3.1	28.4	15.2	3.5	4.3	33.8	33.8	6.4	28.0	28.0
Cycle Q Clear(g_c), s	8.1	21.8	3.1	28.4	15.2	3.5	4.3	33.8	33.8	6.4	28.0	28.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.90	1.00		0.37
Lane Grp Cap(c), veh/h	164	724	323	462	1318	588	194	1046	495	118	564	557
V/C Ratio(X)	0.82	0.98	0.17	1.00	0.49	0.13	0.70	1.06	1.07	0.88	0.85	0.85
Avail Cap(c_a), veh/h	257	724	323	462	1318	588	207	1046	495	118	564	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	43.6	36.1	40.7	26.5	22.9	51.0	38.1	38.1	50.9	35.2	35.2
Incr Delay (d2), s/veh	10.9	28.9	1.1	41.0	1.3	0.5	9.4	46.6	59.4	47.9	12.2	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	12.3	1.3	17.2	6.4	1.4	2.1	20.6	21.2	4.4	13.8	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	72.4	37.3	81.7	27.8	23.3	60.4	84.7	97.5	98.9	47.3	47.5
LnGrp LOS	E	E	D	F	C	C	E	F	F	F	D	D
Approach Vol, veh/h		898			1176			1777			1062	
Approach Delay, s/veh		68.4			48.6			86.6			52.5	
Approach LOS		E			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	45.3	11.8	38.3	33.0	26.9	10.7	39.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.9	35.0	7.3	33.8	28.5	22.4	6.6	34.5
Max Q Clear Time (g_c+I1), s	10.1	17.2	8.4	35.8	30.4	23.8	6.3	30.0
Green Ext Time (p_c), s	0.1	4.1	0.0	0.0	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	66.8
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	220	521	59	260	101	462	928	76	64	1241	31
Future Volume (veh/h)	67	220	521	59	260	101	462	928	76	64	1241	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	239	566	64	283	110	502	1009	83	70	1349	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	299	293	88	323	293	511	2236	997	90	1392	35
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.29	0.63	0.63	0.05	0.39	0.39
Sat Flow, veh/h	159	1617	1585	140	1746	1585	1781	3554	1585	1781	3542	89
Grp Volume(v), veh/h	73	239	566	88	259	110	502	1009	83	70	676	707
Grp Sat Flow(s),veh/h/ln	159	1617	1585	269	1617	1585	1781	1777	1585	1781	1777	1854
Q Serve(g_s), s	3.0	14.1	18.5	4.4	15.5	6.1	28.0	14.7	2.0	3.9	37.3	37.4
Cycle Q Clear(g_c), s	18.5	14.1	18.5	18.5	15.5	6.1	28.0	14.7	2.0	3.9	37.3	37.4
Prop In Lane	1.00		1.00	0.73		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	101	299	293	112	299	293	511	2236	997	90	698	729
V/C Ratio(X)	0.72	0.80	1.93	0.79	0.87	0.38	0.98	0.45	0.08	0.77	0.97	0.97
Avail Cap(c_a), veh/h	101	299	293	112	299	293	511	2236	997	169	698	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	39.0	40.8	46.2	39.5	35.7	35.4	9.6	7.3	46.9	29.7	29.8
Incr Delay (d2), s/veh	21.9	14.2	431.0	30.0	22.3	0.8	35.0	0.7	0.2	13.1	27.1	26.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	6.7	42.2	3.1	7.9	2.4	16.5	5.1	0.7	2.0	20.0	20.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.3	53.1	471.7	76.2	61.9	36.5	70.4	10.3	7.4	60.0	56.9	56.5
LnGrp LOS	E	D	F	E	E	D	E	B	A	E	E	E
Approach Vol, veh/h		878			457			1594			1453	
Approach Delay, s/veh		324.5			58.5			29.1			56.9	
Approach LOS		F			E			C			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	67.4		23.0	33.2	43.8		23.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	9.5	58.5		18.5	28.7	39.3		18.5
Max Q Clear Time (g_c+I1), s	5.9	16.7		20.5	30.0	39.4		20.5
Green Ext Time (p_c), s	0.0	8.8		0.0	0.0	0.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			100.5
HCM 6th LOS			F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	1654	141	0	1738	488	565	1088	10	244	1070	10
Future Volume (veh/h)	0	1654	141	0	1738	488	565	1088	10	244	1070	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1798	153	0	1889	530	614	1183	11	265	1163	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	2377	202	0	1762	786	590	1256	12	269	1152	11
Arrive On Green	0.00	0.50	0.50	0.00	0.50	0.50	0.17	0.24	0.24	0.15	0.22	0.22
Sat Flow, veh/h	0	4963	407	0	3647	1585	3456	5217	49	1781	5216	49
Grp Volume(v), veh/h	0	1275	676	0	1889	530	614	772	422	265	759	415
Grp Sat Flow(s),veh/h/ln	0	1702	1797	0	1777	1585	1728	1702	1862	1781	1702	1861
Q Serve(g_s), s	0.0	36.2	36.5	0.0	59.5	30.4	20.5	26.7	26.7	17.8	26.5	26.5
Cycle Q Clear(g_c), s	0.0	36.2	36.5	0.0	59.5	30.4	20.5	26.7	26.7	17.8	26.5	26.5
Prop In Lane	0.00		0.23	0.00		1.00	1.00		0.03	1.00		0.03
Lane Grp Cap(c), veh/h	0	1688	891	0	1762	786	590	820	448	269	752	411
V/C Ratio(X)	0.00	0.76	0.76	0.00	1.07	0.67	1.04	0.94	0.94	0.99	1.01	1.01
Avail Cap(c_a), veh/h	0	1688	891	0	1762	786	590	820	448	269	752	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	24.4	24.4	0.0	30.3	22.9	49.8	44.7	44.7	50.8	46.8	46.8
Incr Delay (d2), s/veh	0.0	2.0	3.8	0.0	43.7	2.3	47.8	20.1	30.2	50.9	35.2	46.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.2	15.5	0.0	34.2	27.1	12.6	13.2	15.7	11.6	14.6	17.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.4	28.3	0.0	74.0	25.2	97.6	64.8	74.9	101.8	82.0	93.6
LnGrp LOS	A	C	C	A	F	C	F	E	E	F	F	F
Approach Vol, veh/h		1951			2419			1808			1439	
Approach Delay, s/veh		27.0			63.3			78.3			89.0	
Approach LOS		C			E			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	31.0		64.0	22.6	33.4		64.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.5	26.5		59.5	18.1	28.9		59.5
Max Q Clear Time (g_c+I1), s	22.5	28.5		38.5	19.8	28.7		61.5
Green Ext Time (p_c), s	0.0	0.0		13.8	0.0	0.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.4
HCM 6th LOS	E

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	87	407	125	462	362	6	98	1162	69	119	1170	342
Future Volume (veh/h)	87	407	125	462	362	6	98	1162	69	119	1170	342
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	442	136	502	393	0	107	1263	75	129	1272	372
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	697	858	383	628	1204		134	1685	100	144	1746	542
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.00	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	3554	1585	1781	5106	1585	305	4929	293	409	5106	1585
Grp Volume(v), veh/h	95	442	136	502	393	0	107	872	466	129	1272	372
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1702	1585	305	1702	1818	409	1702	1585
Q Serve(g_s), s	2.2	8.0	5.3	15.5	4.8	0.0	9.2	16.9	16.9	8.6	16.3	15.1
Cycle Q Clear(g_c), s	2.2	8.0	5.3	15.5	4.8	0.0	25.5	16.9	16.9	25.5	16.3	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	697	858	383	628	1204		134	1164	621	144	1746	542
V/C Ratio(X)	0.14	0.52	0.36	0.80	0.33		0.80	0.75	0.75	0.90	0.73	0.69
Avail Cap(c_a), veh/h	697	858	383	638	1232		134	1164	621	144	1746	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	24.5	23.5	15.5	23.6	0.0	35.7	21.7	21.7	35.7	21.5	21.1
Incr Delay (d2), s/veh	0.4	2.2	2.6	7.0	0.2	0.0	27.7	2.7	5.0	46.3	1.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.5	2.2	6.8	1.9	0.0	2.9	6.7	7.6	4.1	6.3	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	26.7	26.1	22.5	23.8	0.0	63.3	24.5	26.8	82.0	23.1	24.7
LnGrp LOS	B	C	C	C	C		E	C	C	F	C	C
Approach Vol, veh/h		673			895	A		1445			1773	
Approach Delay, s/veh		24.4			23.1			28.1			27.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.1	22.5		30.0	22.5	22.1		30.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	18.0	18.0		25.5	18.0	18.0		25.5
Max Q Clear Time (g_c+I1), s	17.5	10.0		27.5	4.2	6.8		27.5
Green Ext Time (p_c), s	0.1	2.1		0.0	0.2	1.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	319	1305	363	396	1424	401	319	1181	474	553	1107	365
Future Volume (veh/h)	319	1305	363	396	1424	401	319	1181	474	553	1107	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	347	1418	395	430	1548	436	347	1284	515	601	1203	397
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	1607	454	430	1560	484	361	1314	408	581	1219	402
Arrive On Green	0.11	0.29	0.29	0.12	0.31	0.31	0.10	0.26	0.26	0.17	0.32	0.32
Sat Flow, veh/h	3563	5611	1585	3456	5106	1585	3456	5106	1585	3456	3797	1252
Grp Volume(v), veh/h	347	1418	395	430	1548	436	347	1284	515	601	1078	522
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1702	1585	1728	1702	1585	1728	1702	1645
Q Serve(g_s), s	10.6	26.5	26.1	13.7	33.2	29.0	11.0	27.4	28.3	18.5	34.6	34.7
Cycle Q Clear(g_c), s	10.6	26.5	26.1	13.7	33.2	29.0	11.0	27.4	28.3	18.5	34.6	34.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	376	1607	454	430	1560	484	361	1314	408	581	1092	528
V/C Ratio(X)	0.92	0.88	0.87	1.00	0.99	0.90	0.96	0.98	1.26	1.03	0.99	0.99
Avail Cap(c_a), veh/h	376	1607	454	430	1560	484	361	1314	408	581	1092	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	37.5	37.3	48.1	38.1	36.6	49.0	40.5	40.9	45.8	37.1	37.1
Incr Delay (d2), s/veh	28.1	6.1	16.5	43.1	20.9	19.7	36.9	20.0	136.7	46.4	24.3	36.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	12.3	11.6	8.2	15.9	13.1	6.5	13.5	25.9	11.4	17.4	18.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.8	43.6	53.8	91.3	59.0	56.3	85.9	60.5	177.5	92.2	61.4	73.5
LnGrp LOS	E	D	D	F	E	E	F	E	F	F	E	E
Approach Vol, veh/h		2160			2414			2146			2201	
Approach Delay, s/veh		50.8			64.3			92.7			72.7	
Approach LOS		D			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	39.8	18.2	36.0	23.0	32.8	16.1	38.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	35.3	13.7	31.5	18.5	28.3	11.6	33.6
Max Q Clear Time (g_c+I1), s	13.0	36.7	15.7	28.5	20.5	30.3	12.6	35.2
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	69.9
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1855	255	0	1019	298	0	0	533	1004	272	702
Future Volume (vph)	0	1855	255	0	1019	298	0	0	533	1004	272	702
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor		0.86			0.91	1.00			1.00	0.97	0.91	0.91
Frt		0.98			1.00	0.85			0.86	1.00	0.92	0.85
Flt Protected		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (prot)		6292			5085	1583			1611	3433	3104	1441
Flt Permitted		1.00			1.00	1.00			1.00	0.95	1.00	1.00
Satd. Flow (perm)		6292			5085	1583			1611	3433	3104	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2016	277	0	1108	324	0	0	579	1091	296	763
RTOR Reduction (vph)	0	16	0	0	0	210	0	0	30	0	3	4
Lane Group Flow (vph)	0	2277	0	0	1108	114	0	0	549	1091	675	377
Turn Type		NA			NA	Perm			Perm	Prot	NA	Perm
Protected Phases		4			8					1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)		47.5			47.5	47.5			46.5	42.5	93.5	93.5
Effective Green, g (s)		47.5			47.5	47.5			46.5	42.5	93.5	93.5
Actuated g/C Ratio		0.32			0.32	0.32			0.31	0.28	0.62	0.62
Clearance Time (s)		4.5			4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1992			1610	501			499	972	1934	898
v/s Ratio Prot		c0.36			0.22					c0.32	0.22	
v/s Ratio Perm						0.07			c0.34			0.26
v/c Ratio		1.14			0.69	0.23			1.10	1.12	0.35	0.42
Uniform Delay, d1		51.2			44.8	37.7			51.8	53.8	13.6	14.4
Progression Factor		1.00			1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2		70.9			1.2	0.2			70.2	68.7	0.5	1.4
Delay (s)		122.1			46.0	38.0			121.9	122.5	14.1	15.9
Level of Service		F			D	D			F	F	B	B
Approach Delay (s)		122.1			44.2			121.9			69.4	
Approach LOS		F			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	87.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2966	0	0	1179	767	518	0	480	0	0	0
Future Volume (vph)	0	2966	0	0	1179	767	518	0	480	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5	4.5		4.5			
Lane Util. Factor		0.86			0.95	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		6408			3539	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		6408			3539	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	3224	0	0	1282	834	563	0	522	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	382	0	0	19	0	0	0
Lane Group Flow (vph)	0	3224	0	0	1282	452	563	0	503	0	0	0
Turn Type		NA			NA	Perm	Perm		Perm			
Protected Phases		4			8							
Permitted Phases						8	2		2			
Actuated Green, G (s)		32.5			32.5	32.5	18.5		18.5			
Effective Green, g (s)		32.5			32.5	32.5	18.5		18.5			
Actuated g/C Ratio		0.54			0.54	0.54	0.31		0.31			
Clearance Time (s)		4.5			4.5	4.5	4.5		4.5			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		3471			1916	857	1058		859			
v/s Ratio Prot		c0.50			0.36							
v/s Ratio Perm						0.29	0.16		c0.18			
v/c Ratio		0.93			0.67	0.53	0.53		0.59			
Uniform Delay, d1		12.7			9.9	8.8	17.2		17.5			
Progression Factor		1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2		5.1			0.9	0.6	1.9		2.9			
Delay (s)		17.8			10.8	9.4	19.1		20.4			
Level of Service		B			B	A	B		C			
Approach Delay (s)		17.8			10.2			19.7			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	226	28	1138	74	1022
v/c Ratio	0.18	0.43	0.09	0.51	0.29	0.45
Control Delay	9.9	13.3	4.9	5.7	8.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	13.3	4.9	5.7	8.2	5.4
Queue Length 50th (ft)	4	17	2	63	7	56
Queue Length 95th (ft)	24	40	11	120	30	106
Internal Link Dist (ft)	55	291		153		271
Turn Bay Length (ft)			40		100	
Base Capacity (vph)	640	1074	305	2244	259	2272
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.21	0.09	0.51	0.29	0.45

Intersection Summary

Distance to freeway off-ramp is is approx. 160 ft.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	106	365	32	1645	99	944
v/c Ratio	0.35	0.74	0.08	0.65	0.67	0.37
Control Delay	17.0	35.6	4.7	7.7	35.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	35.6	4.7	7.7	35.3	5.1
Queue Length 50th (ft)	18	76	4	195	24	85
Queue Length 95th (ft)	62	125	14	295	#134	128
Internal Link Dist (ft)	55	291		153		271
Turn Bay Length (ft)			40		100	
Base Capacity (vph)	361	593	382	2527	147	2573
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.62	0.08	0.65	0.67	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Distance to freeway off-ramp is is approx. 160 ft.

Lane Group	EBL	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	178	108	1620	860	275	1621	602	1463
v/c Ratio	0.09	0.06	1.74	1.78	0.91	1.19	1.68	1.19dr
Control Delay	11.5	21.9	358.6	389.2	83.7	129.6	350.5	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	21.9	358.6	389.2	83.7	129.6	350.5	20.0
Queue Length 50th (ft)	28	17	~1620	~469	101	~397	~320	140
Queue Length 95th (ft)	45	30	#1888	#592	#179	#475	#432	206
Internal Link Dist (ft)		430				303		392
Turn Bay Length (ft)	175		300	150	175		140	
Base Capacity (vph)	1919	1918	931	483	302	1366	358	1727
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.06	1.74	1.78	0.91	1.19	1.68	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBL	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	387	203	1020	625	235	1503	314	2195
v/c Ratio	0.21	0.11	1.28	1.28	1.19	0.91	0.98	1.60dr
Control Delay	15.7	27.5	162.9	185.6	174.6	54.4	105.1	79.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	27.5	162.9	185.6	174.6	54.4	105.1	79.0
Queue Length 50th (ft)	83	41	~1026	~343	~122	352	138	~548
Queue Length 95th (ft)	112	60	#1286	#462	#209	401	#235	#643
Internal Link Dist (ft)		430				303		392
Turn Bay Length (ft)	175		300	150	175		140	
Base Capacity (vph)	1861	1857	798	488	198	1659	319	1991
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.11	1.28	1.28	1.19	0.91	0.98	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

APPENDIX H:

PROPOSED LAND USE AND URBAN DESIGN ELEMENTS

This page intentionally left blank

LAND USE element

City of Long Beach General Plan

MARCH 2018

creating vibrant and exciting places

LONG BEACH
DEVELOPMENT SERVICES
BUILDING A BETTER LONG BEACH

"Growth is inevitable and desirable, but destruction of community character is not. The question is not whether your part of the world is going to change. The question is how."

Edward T. McMahon
The Conservation Fund

land use

City of Long Beach

LAND USE element

of the City's General Plan

Adopted by the City Council on

_____

Prepared by Long Beach Development Services

Assisted by MIG and Cityworks Design

ACKNOWLEDGEMENTS

Mayor and City Council

Honorable Mayor Robert Garcia
Lena Gonzalez, Councilmember, 1st District
Jeannine Pearce, Councilmember, 2nd District
Suzie Price, Councilmember, 3rd District
Daryl Supernaw, Councilmember, 4th District
Stacy Mungo, Councilmember, 5th District
Dee Andrews, Councilmember, 6th District
Roberto Uranga, Councilmember, 7th District
Al Austin, Councilmember, 8th District
Vice Mayor Rex Richardson, Councilmember, 9th District

Office of the City Manager

Patrick H. West, City Manager
Tom Modica, Assistant City Manager

City of Long Beach Planning Commission

Erick Verduzco-Vega, Chair
Richard Lewis, Vice Chair
Mark Christoffels
Ron Cruz
Josh LaFarga
Andy Perez
Jane Templin
Donita Van Horik, Retired

City of Long Beach Development Services Staff

Linda F. Tatum, FAICP, Director
Amy J. Bodek, AICP, Director 2010-2017
Christopher Koontz, AICP, Advance Planning Officer
Carrie Tai, AICP, Current Planning Officer
Ira Brown, Planner
Craig Chalfant, Planner
Fern Nueno, AICP, Planner
Alison Spindler, Planner
Angela Reynolds, AICP (retired)
Pat Garrow (retired)
Steve Gerhardt, AICP (retired)

Special Thanks

A special thanks is extended to the Long Beach Department of Technology Services for their able assistance in the preparation of the maps contained in this document.

table of CONTENTS

1 Vision: A City That Thrives

A City that Thrives 3

2 Introduction: The Next Bold Moves

Why and How We Plan 9
City of Long Beach: Past, Present and Future 10
Bold Moves: Vision in Motion 16

3 Context: Understanding Long Beach

General Plan Framework and Regulatory Context 27
Our Region. Our City. 31
Heart and Soul of Long Beach: Our Neighborhoods 40
Long Beach Economy 44
Sustainability and the Natural Environment 47
Healthy Communities 51
Smart City 55
Addressing Our Challenges 56

4 Land Use Plan: Creating Exciting and Vibrant Places

Land Use Plan Overview 61
PlaceTypes 62
Citywide Goals, Strategies, and Policies 110

5 Implementation: Identifying Working Solutions

Implementation Overview 125
Citywide Implementation Strategies 124
Neighborhood Strategies 139

6 Administration: Maintaining the Land Use Element

Element Review, Amendment, and Consistency 167

7 Appendix

References 173
Glossary 174
Land Use Policies Addressing Climate Change and Sustainability 181

list of FIGURES

Maps

Map LU-1: Federal Emergency Management Agency Flood Zones 29
Map LU-2: Local Coastal Zone 30
Map LU-3: Regional-Serving Facilities 37
Map LU-4: Community Plan Areas and Neighborhoods 41
Map LU-5: Los Angeles and San Gabriel Rivers Watersheds 48
Map LU-6: Impacted Communities 54
Map LU-7: PlaceTypes Map 66
Map LU-8: PlaceType Height Limits Map 68
Map LU-9: Open Space PlaceType Map 71
Map LU-10: Founding and Contemporary Neighborhood PlaceType Map 74
Map LU-11: Multi-Family Residential - Low and Moderate PlaceTypes Map 77
Map LU-12: Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes Map 81
Map LU-13: Transit-Oriented Development - Low and Moderate PlaceTypes Map 85
Map LU-14: Community Commercial PlaceType Map 88
Map LU-15: Industrial PlaceType Map 91
Map LU-16: Neo-Industrial PlaceType Map 94
Map LU-17: Regional-Serving Facility PlaceType Map 97
Map LU-18: Downtown PlaceType Map 102
Map LU-19: Waterfront PlaceType Map 106
Map LU-20: Major Areas of Change 113
Map LU-21: Community Plan Areas and Neighborhoods 139
Map LU-22: North Long Beach 141
Map LU-23: Bixby Knolls 143
Map LU-24: Westside and Wrigley 146
Map LU-25: Eastside 149
Map LU-26: Central 152
Map LU-27: Traffic Circle 154
Map LU-28: Downtown 157
Map LU-29: Midshore 160
Map LU-30: Southeast 163

Figures

Figure LU-1: Population Growth 12
Figure LU-2: Percent of Employees by Industry in 2010 (Long Beach and Los Angeles County) 44
Figure LU-3: Mixed-Use Types 62
Figure LU-4: Residential Density and Floor-Area Ratio (FAR) 63

Tables

Table LU-1: Long Beach Growth In Population, Households and Employment Between 2012 and 2040 31
Table LU-2: Long Beach's Largest Employers (2012) 45
Table LU-3: PlaceType Uses, and Density and Intensity Levels 65
Table LU-4: Citywide Implementation Strategies 126
Table LU-5: Community Plan Areas and Neighborhoods 138
Table LU-6: PlaceTypes and Zoning Districts Consistency 169
Table LU-7: Land Use Policies Addressing Climate Change and Sustainability 182

This page intentionally left blank.

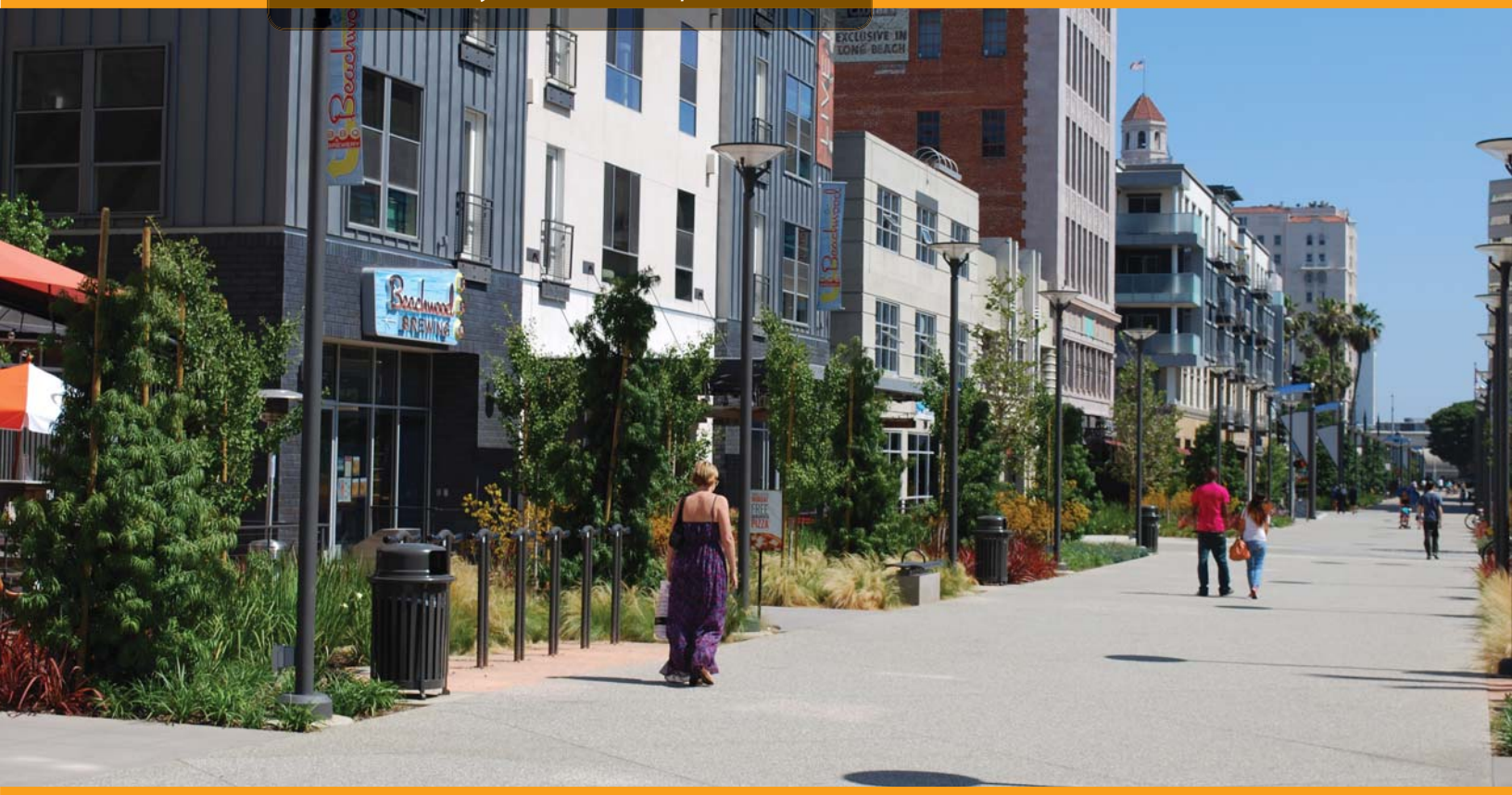
Vision

A City That Thrives

1

"Do not go where the path may lead, go instead where there is no path and leave a trail."

Ralph Waldo Emerson
American essayist, lecturer and poet



1

Vision

A City That Thrives

- A City That Thrives.....3
  - » A Bold Vision for Long Beach..... 3

VISION: A CITY THAT THRIVES

Long Beach has long been a destination for people and businesses looking to make bold moves. From the indigenous Tongva who moved from inland areas to take advantage of the ocean's bounty to the immigrants of the twenty-first century seeking education and employment; and from the early ranchos to today's bustling port-based and healthcare industries, the City's wonderful location and welcoming environment have always attracted people looking to succeed.

Our vision for Long Beach continues this tradition by promoting success and rewarding residents and businesses who invest in our neighborhoods, public spaces, economy and infrastructure. **We have a vision for our City as a place where environmental considerations are integral to all planning and development decisions. We envision our City as a place where people can learn at all stages of their lives and draw on this education for personal growth. We have a bold vision for Long Beach: We are a place where people can take advantage of big city opportunities without losing the benefits of living in compact and comfortable neighborhoods with the beach at their front door.**

A Bold Vision for Long Beach

Long Beach is a beautiful City with a rich heritage and culture. Its setting on the Pacific Ocean, between the mouths of two major rivers, provides a natural environment that wonderfully balances the urbanscapes we have created over the past 150 years. Given our location between the cities of Los Angeles and Irvine and the access afforded by the freeways, port and airport, Long Beach has been able to evolve into a modern, technologically savvy city. We have an active and lively downtown, dynamic waterfront and port facilities, diverse recreational spaces, robust employment campuses, innovative industrial areas, energetic educational facilities, long-established neighborhoods and contributing commercial corridors. All of this adds up to some of the most sought after real estate in Southern California.

The recent economic recession, housing crisis, new legislative mandates and changing climate, along with community input have each helped to inform planners in creating a vision for Long Beach and in shaping this updated land use plan. Long Beach is, once again, a city in transition; reinventing itself in a new global economy. Our approach to land use planning must be flexible enough to embrace new and diverse lifestyles, novel business initiatives, evolving educational objectives and technological advances. People want to live closer to work

Long Beach: A City of vibrant neighborhoods, a Downtown skyline, the Queen Mary, Port of Long Beach and the Pacific Ocean.

in neighborhoods with great parks and places to shop. Businesses want to be agile and to maximize profits. The community wants more mobility options that support the goals of residents, visitors and employers. We want to plan for change and be a resilient city with a strong economy. How can this plan respond to these challenges? Below are themes and desired outcomes that the City will strive to achieve in implementing the collective vision of a city that thrives. The following pages describe an ideal snapshot of how Long Beach might evolve in the future, relative to each of these themes:

» Shared Economic Prosperity.
» A City at the Water's Edge.
» Enhanced Mobility Choices.
» Healthy and Active Neighborhoods.
» Housing Opportunities, Housing Quality.
» Education and Life-long Learning.
» Responsive Recreational Facilities and Open Space.
» Safe and Secure Living Environments.
» Environmental Health.

Shared Economic Prosperity

Businesses in Long Beach provide diverse jobs for people throughout the region. Quality locations and convenient access along with the availability of technologies and modern infrastructure continue to attract new companies and innovators. Business expansion and job growth will be accommodated in industries of broad benefit: information technology, research and applications of "green" businesses, sustainable utilities, goods movement, manufacturing, health care and education. This plan's land use types, specifically tailored to Long Beach, allow emerging business practices to evolve and grow quickly, both in physical size and economic strength.

Long Beach promotes its position as the ideal location to nurture small- and medium-size businesses and to establish strong regional-serving office and business enterprises along the I-405 freeway corridor. The benefits of transit access as an economic driver are promoted as well, with premier business locations integrated into the City's transit-oriented development strategies.

A City at the Water's Edge

The Pacific Ocean is our porch and our front yard. It is here that we welcome visitors and invite others to become a part of our community. Living at the water's edge means we have a responsibility to be good environmental stewards and to address the environmental conditions associated with oceanfront living. The rivers that feed into the ocean and nourish the wetlands require our attention. Our beaches and waterways are one of our most important assets, so we will continue to improve and protect them.

We connect to our bays, marinas, wetlands and beaches through an extensive network of trails and accessways that support a range of mobility modes such as walking, biking, transit and boating. These waterfront and water's edge areas have usable public spaces for all residents and visitors. We provide for views and access to the water from streets, parks and public spaces. We continue to improve the quality of water in these resources and strive to keep our beaches clean.

Along the water's edge - Shoreline Aquatic Park.

Quality neighborhoods and historic homes - California Heights.

Enhanced Mobility Choices

The urban fabric and lively streetscapes of Long Beach contribute to walkable environments. Mixes of uses and transit-oriented development allow us to walk to a local cafe or transit stop, and to accomplish our daily routines without the need for a car. The Metro Blue Line, bus routes, urban trails and bike boulevards provide safe, flexible and convenient access to and from home, work and school. Our mobility options are fully integrated with land use planning, providing us with many options.

Healthy and Active Neighborhoods

All neighborhoods in Long Beach have uses that meet residents' day-to-day needs—from safe, comfortable housing to places to shop, learn and gather. Neighborhood streets are retrofitted to allow us to move around more easily, with inviting accommodations for pedestrians and bicyclists. We reinforce the physical connections between neighborhoods, parks and other activity centers, enhancing accessibility for all people. Grocery stores, healthy food markets, farmers' markets and community gardens are conveniently accessible from where people live.

Housing Opportunities and Housing Quality

Long Beach offers diverse housing options for households of all income ranges and lifestyles: these include college students, seniors, families and young people just starting out in the work force. Mixed-use neighborhoods, high-rise apartments and subdivisions of single-family homes represent just a few types of neighborhoods in which Long Beach residents live. Importantly, housing diversity matches the needs of the local workforce, supporting our economic development. New housing developments are designed to blend seamlessly into established neighborhoods, with compatible patterns and styles.

Education and Life-long Learning

The schools and colleges in Long Beach are truly exceptional, offering education to our youth and people during all stages of life. Although a third of our residents were born abroad, local schools and other educational institutions allow new families to become readily integrated and contribute immediately to their own success. Solid education builds a solid work force. Quality institutions of higher learning attract bright thinkers, as do knowledge industries seeking an educated work force. These industries also benefit from the research offered at respected universities. By supporting the objectives of

Regional office environments - Kilroy Airport Center.

Greater housing options in downtown - City Place.

Access to transit facilities - Metro Blue Line light rail.

public schools and accommodating the expansion needs of post-secondary institutions, the City proves that it values education both as an economic driver and as a path to personal enrichment. Additionally, long-term planning should prohibit new schools from locating near freeways and industries so that children may learn and play freely without exposure to the health risks associated with air pollution.

Responsive Recreational Facilities and Open Space
Long Beach's system of parks and open spaces is continually improved to respond to the needs of residents and visitors. We make it a priority to integrate parks and engaging public spaces in all areas of the City, particularly in underserved neighborhoods. Our parks and open spaces have active recreational facilities and provide environmental benefits consistent with the City's public health goals. We encourage respect for natural resources by managing open spaces to include native landscape areas, meandering trails, open meadows and views to the water and ocean. Our beaches are the pride of the community, with clean sands, clean water and rideable waves.

Safe and Secure Living Environments
We target improvements and public/private investment in blighted spots and areas of disrepair to improve physical and economic conditions. Through these improvements and expanded public services—especially schools, fire protection and law enforcement—we work to reduce crime and improve the quality of life in affected neighborhoods.

Environmental Health
Living at the water's edge heightens our awareness of natural environments and the effects human activities can have on air quality, water quality, wildlife and marine habitats and even sea-level rise. Our approach to land use/mobility planning reduces pollutant levels and conserves nonrenewable resources. By promoting compact and infill sustainable development practices, we contribute toward improved environmental quality locally, regionally and globally. We are also creating buffers between residential uses and sensitive receptors (e.g., schools, hospitals and daycare centers) and facilities such as freeways, industries, the ports of Long Beach and Los Angeles and the Long Beach Airport that might affect them.

Parks and open spaces - El Dorado Park.

This bioswale helps clean polluted stormwater. - 2nd Street and Orange Avenue.

Introduction

The Next Bold Moves

2

"It is not the strongest of the species that survives, not the most intelligent, but the one most responsive to change."

Charles Darwin
English naturalist

2

Introduction

The Next Bold Moves

- Why and How We Plan 9
  - » Long Beach Planning Approach 9
- City of Long Beach: Past, Present and Future 10
  - » Past: Historic Bold Moves Influenced Land Use Today 10
  - » Long Beach Today and Tomorrow 13
- Bold Moves: Vision in Motion 16
  - » Target Growth and Mobility 16
  - » Capitalize On Our Regional Strategic Location and Strengths 17
  - » Build Up Local Businesses and Educational Institutions 18
  - » Become a Smarter City 19
  - » Provide Clean, Renewable Energy 20
  - » Prioritize Green and Healthy Living Approaches 21
  - » Address and Adapt to Climate Change 22
  - » Celebrate and Support Our Diversity 23

WHY AND HOW WE PLAN

The Land Use Element directs the long-term physical development of the City by guiding use, form and the characteristics of improvements on the land. It designates the location, types and intensity of housing, businesses, industries, open spaces, public buildings, airports, ports, marinas and other uses in Long Beach. It also focuses on the City's urban form and character by addressing the height and massing of buildings, the relationship between building façades and public sidewalks and streets, and character features such as community gathering places or pedestrian amenities. In essence, the element sets out the ultimate physical pattern of development and how buildings are used in Long Beach.

Long Beach will continue to be influenced by events and trends in the region, the country and the world. Long Beach's evolving demographics and economy reflect changes that are occurring throughout the State. The City is experiencing the negative impacts of a statewide housing shortage and affordability crisis. Similarly, recognizing and preparing for environmental changes will strategically position the City to address potential adverse conditions. Climate change, for example, may lead to a rise in sea level, impacting Long Beach's coastal areas.[1] Fluctuations in the housing market may alter housing construction trends and housing affordability in the City. From an urban form and land use perspective, Long Beach must address development pressures so that the needs of present and future residents and businesses are met most efficiently. Through careful planning, overall quality of life is enhanced neighborhood by neighborhood and street by street.

This Land Use Element responds to many conditions the community can anticipate:

- Accommodating a population expected to reach 484,485 by 2040 a 3.2 percent increase from a population of 466,255 in 2012.
- Creating opportunity for 28,524 housing units both to accommodate population growth and to address overcrowding of existing Long Beach households.
- Continuing municipal finance challenges and the need to allocate limited resources to provide routine community services and infrastructure maintenance.
- Sustaining a diverse and competitive local economy.
- Increasing interest in sustainable development practices and approaches to environmental protection.
- Retaining the character and quality of residential neighborhoods.
- Providing many options for housing, mobility and lifestyle choices.
- Using urban planning approaches to improve the health of residents.
- Responding to changing technology.

Long Beach Planning Approach

The City's multifaceted planning approach considers a broad range of local community stakeholder perspectives, as well as broader regional perspectives.

Bottom-Up Approach

The "bottom-up" approach views the City from the perspective of individual residents, business owners and other community stakeholders and involves matters of daily importance such as affordable housing, diversity of shops and services, quality schools, available public facilities and services, safe and walkable streets, diverse employment options and places to play and relax. During the planning process an extensive community outreach campaign helped ensure that the final plan would reflect a broad range of community perspectives. Residents attended neighborhood workshops where they shared opinions about their neighborhoods, ongoing challenges and available services. Their ideas and dreams have been incorporated into this Land Use Element. This element continues to emphasize complete and healthy neighborhoods by providing for educational, commercial, employment, recreational, civic, healthy food and housing opportunities for all residents within walking distance of their homes.

Top-Down Approach

The "top-down" approach takes another view of Long Beach from a citywide and regional perspective. The City—due to its size, location and regional-serving facilities—is influenced by larger regional forces, including growth pressures, employment and housing relationships, transportation challenges, economic and market fluctuations, air and water quality, regional effects of climate change and the depletion and misuse of natural resources. Long Beach must also operate and make decisions under a regional scope as the results from these decisions can influence all of Southern California.

This Land Use Element ensures that these broader perspectives are addressed because they affect every resident, employee and business owner in the City and beyond.

CITY OF LONG BEACH: PAST, PRESENT AND FUTURE

Past: History Influenced Land Use Today

Long Beach's history has significantly influenced the City's urban form and character. This section provides a general history of development in Long Beach that have shaped land use patterns and the physical improvements we see today, from the earliest inhabitants and later settlers to the major events and decisions made by community leaders. As such, this provides the basis for future changes to meet our bold vision of the future.

Very Early History and Settlement

The Los Angeles and San Gabriel rivers historically were part of the homeland of the Gabrielino-Tongva Native American tribe. For hunters and gatherers, the rivers provided plentiful sources of water and food, including fish, small mammals and acorns from the abundant oak trees along the rivers. [2]

In 1784, the Spanish Governor of California granted a large swath of land as a reward for his military service to Manuel Nieto, a soldier from the Presidio of San Diego who was assigned to the San Gabriel Mission. His heirs established Rancho Los Cerritos and Rancho Los Alamitos, encompassing the majority of what now comprises Long Beach. [3]

In 1881, an entrepreneur named William Willmore entered into an agreement to develop the American Colony Tract, which included a town site that was named Willmore City.[4] The new colony would be linked to Los Angeles via American Avenue (later renamed Long Beach Boulevard) and would offer resort hotels along the waterfront, a downtown business district and small lots for family farms. The new colony was heavily advertised throughout the country as a healthful seaside haven. Soon thousands of families traveled west looking for what the newspapers had promised: clean air, sunshine, fertile soil and economic opportunity.

Seaside Resort to Booming Oil Town: 1880 to 1930

By the end of the 19th century, the City's waterfront had become an important tourist destination. The first pleasure wharf was constructed around 1885, a pier at the south end of Magnolia was built in 1888 and the Pine Avenue Municipal Pier opened in 1893.[5] Long Beach's residential population at this time was a meager 500 residents, but tourists arriving by train caused significant fluctuation in daytime population. By 1902, the Pacific Electric Railway passenger line was completed between Long Beach and Los Angeles, and railway passenger service on the Newport Line connected Long Beach with nearby communities along the coast. Soon the Pike Amusement Park was established along with a municipal auditorium, new hotels, a bathhouse and improvements on the harbor side of the mouth of the Los Angeles River.

Pine Avenue storefronts and streetscape in 1910.

In 1921 oil was discovered in Signal Hill, a separate community completely surrounded by Long Beach.[7] Soon the ownership, production and sale of this natural resource became Long Beach's primary industry. Between 1920 and 1930, the population more than doubled, growing from 55,593 to 142,032. High-rise hotels and apartments revealed a new, more sophisticated vision for the City and solidified its potential as a resort destination.

Defense Industry and Postwar Growth: 1930 to 1960

In 1937, Reeves Field opened as a permanent naval air base on Terminal Island, followed by the Roosevelt Naval Base, Shipyard and Hospital.[8] During World War II, the naval dry docks provided routine and battle damage repairs to a parade of tankers, cargo ships, troop transports, destroyers and cruisers. Peak civilian employment of 16,091 civilian employees was reached in 1945.

In order to produce planes for the war effort, the Douglas Aircraft Company constructed manufacturing buildings in 1942 adjacent to Daugherty Field.[9] At its peak in 1943, Douglas Aircraft employed over 41,000 employees. Together with the Navy presence, these facilities were a huge economic factor, contributing to the City's significant population growth between 1940 and 1950 (164,271 to 250,767 residents), which spurred suburban development in eastern and northern Long Beach and surrounding communities.

Between 1950 and 1960 the City's population increased by 37 percent, from 250,767 to 344,168 residents. Suburbanization of Southern California took a permanent hold when the automobile became extremely popular. Roadways were built and low-density housing tracts proliferated throughout the Los Angeles area, enabled by the Federal Interstate Highway system. Long Beach suburbanized to the north and east. Bixby Knolls and Los Altos were developed and new single-family homes, duplexes and garden apartments sprung up. The automobile brought new commercial establishments along busy highways and thoroughfares, and auto-oriented shopping centers appeared adjacent to the new residential tracts.

A Change in Redevelopment: 1970 to 1999

The 1970s saw the closure of Pike Pier, and the revitalization of downtown Long Beach was under way. A large portion of downtown Long Beach was designated as a redevelopment area with the focus on restoring downtown to a robust commercial center. It was during this period that most of the City's first class hotels and Class A office buildings were built. Construction of the Long Beach Plaza Mall, the Promenade and the Long Beach Convention and Entertainment Center also began. [10]

Beachgoers fill the beach in Long Beach in 1931, with Villa Riviera at center.

The 1980s saw the opening of Shoreline Village. Also, the first modern high-rise hotel and several large office buildings were added to the downtown scene. Multi-million dollar condominium developments along the Ocean Boulevard corridor played a pivotal role in the transformation of the central business district. During the 1980s, affordable housing options became increasingly scarce. In response, the Council adjusted zoning regulations to encourage a broader mix of housing. While the intent was sound, the results were not as expected: many old bungalows were razed and developed into unappealing "crackerbox" apartment buildings. Between 1980 and 1990, the population increased by 19 percent, from 361,355 to 429,433.

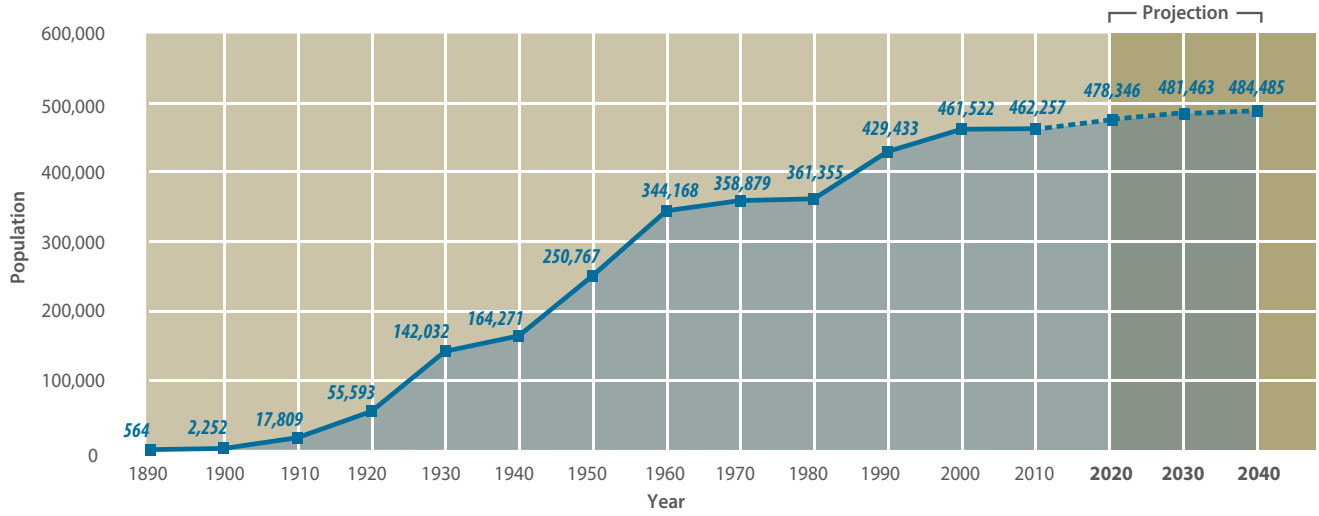
As the final decade of the 20th century dawned, Long Beach began to prosper once again. Office occupancy rates began to rise, Pine Avenue began to emerge as a destination for innovative restaurants with the opening of new eateries, and the East Village blossomed as a burgeoning arts district.

A Rebirth of Long Beach: 2000 to 2010

Long Beach experienced a continued renaissance with new development projects in downtown and infill sites throughout the City. New land use plans in place for downtown, select transit-oriented districts emerged, and lands formerly occupied by McDonnell-Douglas (and later Boeing) aircraft manufacturing operations were redeveloped. New urban condominiums and apartments sprang up along the Metro Blue Line route. In 2003, the Pike at Rainbow Harbor opened as a dining and entertainment district, linking the Long Beach Convention Center to Rainbow Harbor's waterfront and the Aquarium of the Pacific. Despite this new development activity, the population grew less than one percent between 2000 to 2010 (461,522 to 462,257 residents), making it one of the slowest growth decades since the City's existence.

Regardless, since its initial incorporation in 1888, Long Beach has matured into a world class city with diverse cultures, regional attractions, scenic coastline, port and airport facilities, quality neighborhoods and viable commercial districts. For a more detailed discussion on Long Beach's history, see the Historic Preservation Element.

Figure LU-1: Population Growth



Source: California Department of Finance, Demographic Unit, Historical Census Populations of Counties and Incorporated Cities in California, 1850–2010 and SCAG.

Long Beach Today and Tomorrow

Today, the City of Long Beach is committed to continuing its tradition of improving the physical environment by achieving multiple and interrelated land use goals:

- Be a model for healthy and sustainable planning and development.
- Support continuous economic development.
- Grow smart and plan for change.
- Preserve and enhance neighborhoods and local retail hubs.
- Offer broad-based housing opportunities.
- Design for superior mobility and connectivity.
- Provide a fair and equitable land use plan.
- Provide reliable public facilities and infrastructure.
- Increase access to green and open spaces.
- Restore resources and reconnect to our natural environment.

To achieve these goals, the City will continue to embrace many past planning concepts, including several from the previous 1989 Land Use Element. But, the City must also broaden its overall approach and priorities related to land use, economics, sustainability and the environment to ensure more successful outcomes.

PlaceTypes: A New Approach to Land Use Planning

Long Beach is a city of neighborhoods, corridors and districts, each embodying a character that makes it unique. These areas include a range of uses from residential, commercial, industrial and civic uses, to parks and open spaces. Urban form and design features in these areas help differentiate Naples from Los Altos for example, or Stearns Park from Willmore City. This Land Use Element takes land use planning to a new level by focusing not only on uses of the land, but also on the physical features and characteristics that define these unique places: building massing and scale, development patterns, accessibility, infrastructure and streetscape design.

Since the U.S. Department of Commerce first published the Standard Zoning Enabling Act in the 1920s, rigid, standardized regulatory approaches have dominated land use planning. The City of Long Beach is moving away from the old zoning approach of segregating land uses to an innovative approach called "**PlaceTypes,**" which emphasizes flexibility and allows for a mix of compatible uses. This new approach provides regulating guidance on land use, form and character-defining features. The context-based PlaceTypes approach also integrates pedestrian accessibility and other forms of mobility (such as bicycling and transit) tailored to particular locations within the City. Specific design features that differentiate Long Beach's neighborhoods, corridors and districts are covered in this Land Use Element.

Long Beach aims to enhance the City's streetscapes and create attractive neighborhoods.

As a result of this evolved land use planning approach, we expect to create and support:

» **Diverse mixed-use neighborhoods.** Along corridors, within neighborhoods, along the waterfront and in the downtown a mixture of uses will produce vibrant and active places.

» **Distinctive physical qualities.** PlaceTypes will contribute to distinct, recognizable places that highlight local character and uniqueness of our various neighborhoods.

» **Property and business flexibility.** Property and business owners will have greater flexibility and direction on how they can develop and use their properties to thrive, which will in turn encourage economic investment and redevelopment.

Downtown, Corridors, Neighborhoods and Regional-Serving Facilities

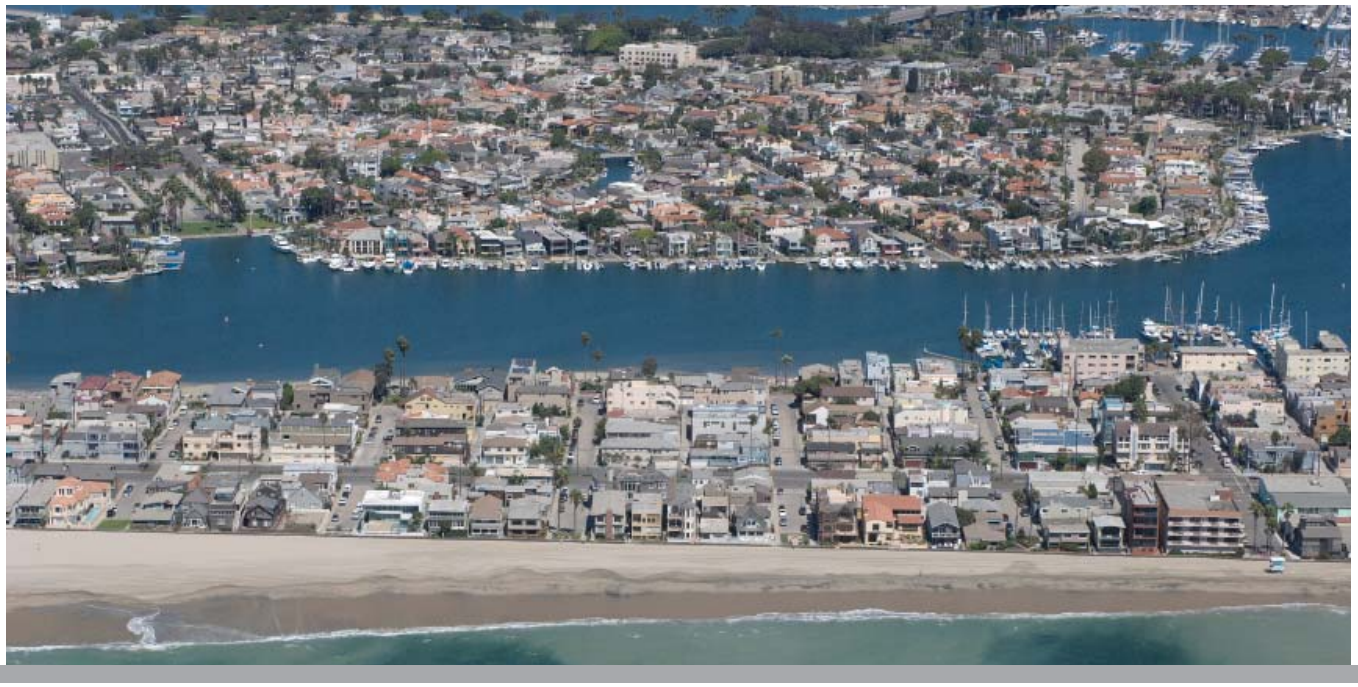
The Land Use Element provides guidance on how to shape the physical environment of Long Beach through interconnected districts, corridors, neighborhoods and regional-serving facilities. The framework reinforces the downtown as the center of business, culture and living, continuing to transform downtown as a vibrant place for residents and visitors. This is balanced with efforts to: 1) shape identity and pursue "place-making" along major corridors through reuse and development intensification, mixed-use development and streetscape enhancements; and 2) create complete residential neighborhoods where residents in any neighborhood can comfortably stroll or pedal to school, work, leisure and civic activities.

In Long Beach today, vacant land is a scarce resource. Thus, reinvestment/redevelopment will constitute most new development in the City. This new development will be primarily concentrated along corridors in the downtown and within areas ready for change. Stable residential neighborhoods will experience little change, with the focus instead on preservation and enhancement. Residential neighborhoods are protected by a policy framework under which the existing housing stock character is respected, conserved and enhanced.

Land use and urban form decisions must be carefully crafted to: meet the needs of the City's evolving demographics, foster neighborhood enhancement, plan for diverse open spaces, promote employment and revitalize commercial centers and corridors.

Enhancing the traditional neighborhood grid of streets is key to establishing a pedestrian realm that provides for streets that are pedestrian/bike friendly, safe and properly illuminated, while minimizing the impacts of cars and

Looking north toward Peninsula, Naples, Alamitos Bay and 2nd Street Bridge (near top).



trucks. Paramount is the need to enhance the pedestrian/bike and transit connections from the neighborhoods to retail services and corridors. By also focusing on long-term, sustainable economic and social health approaches, these strategies will help Long Beach reduce local contributions to greenhouse gas emissions by making it possible for greater numbers of people to make fewer and shorter auto trips.

Land use policies call not only for the preservation of open space, but also for creating new urban green space opportunities in the City. Throughout the City, open space will improve in quality. New opportunities for open space will be found in the western, central and northern areas of the City, where the supply is limited and demand is great.

As we look to the future, the goals and policies in this Land Use Element will guide choices toward a high-quality, balanced community that residents, businesses and visitors will value and appreciate. The following pages outline priorities for improving land use and urban form, and present a series of "bold moves" or broad strategies to support the City's forward-looking vision. These bold moves serve as a framework for the concepts, goals and policies within this Land Use Element.

Extensive bike paths and routes throughout the City are providing better connections to neighborhoods and centers.

Parklets are not only providing opportunities for businesses, but they are creating small urban gathering spaces.

BOLD MOVES: VISION IN MOTION

This Land Use Element firmly commits Long Beach to realizing its vision through the following bold moves:

» Target Growth and Mobility.
» Capitalize on Our Regional Strategic Location and Strengths.
» Build Up Local Businesses and Educational Institutions.
» Become a Smarter City.
» Provide Clean, Renewable Energy.
» Prioritize Green and Healthy Living Approaches.
» Address and Adapt to Climate Change.
» Celebrate and Support Our Diversity.

Target Growth and Mobility

New development projects, infrastructure and physical improvements will emphasize land use and mobility connectivity. Growth will be targeted along the I-405 freeway corridor, downtown, north of the Long Beach Airport, around medical and secondary education campuses and near transit routes and stops.

Greater housing density and commercial intensity will be planned around transit stations, allowing transit services to be more efficient and successful, as they serve a larger population within a 15-minute walking distance. New physical improvements to the public realm (sidewalks, public spaces and streets), and private property interface will accommodate pedestrians, as well as alternative transportation modes, thereby increasing walking, biking and transit amenities.

Compact, mixed-use development will create walkable, pedestrian-friendly environments within targeted areas, including transit-rich areas, along corridors and appropriate infill sites. Medical and secondary education campuses will be integrated with the City's transit and bike systems, providing better connectivity and alternative transportation modes.

How will this bold move impact you and your community?

» Targeted Growth. New targeted growth areas, such as Downtown, will create new business and employment opportunities.

» Transit-Oriented Districts. More housing and employment options will be available around transit stations. Residents will truly be able to rely on transit services as viable alternatives to driving private vehicles. The environment around transit stations will become more pedestrian active.

» Less Dependence on the Automobile. With greater housing, employment options and retail services near transit stops, residents and employees will be able to more conveniently traverse through and beyond Long Beach without private vehicles, thereby reducing traffic congestion.

New housing options are being focused around the Metro Blue Line stations and major bus corridors.

Capitalize on Our Regional Strategic Location and Strengths

Long Beach is advantageously located at the border of Los Angeles and Orange counties, along the Pacific Ocean. The City is accessible by several key freeways and regional arterials and is alongside the terminus of two major rivers: the Los Angeles and San Gabriel Rivers. Long Beach is also home to world and regional-serving facilities, including the Port of Long Beach, Long Beach Airport, City and trade colleges and California State University Long Beach, energy production facilities, a regional park, downtown and shoreline, cultural attractions and major healthcare facilities. This Land Use Element includes strategies to maximize the potential of the City's location and strengths.

Downtown has grown into a diverse center with tourism, commercial, office, residential, retail, and civic and government uses. The airport area, including Kilroy Center and Douglas Park, is transitioning from airplane manufacturing into a corporate office center. The adjacent commercial and light industrial area is positioned to be a major economic and employment center. With its convenient proximity to Long Beach Airport and surrounding hospitality uses, it is emerging as a business hot spot.

Long Beach is also home to several major hospitals and medical facilities, including Long Beach Memorial Medical Center, Miller Children's Hospital, Community Hospital, St. Mary Medical Center, Veterans Hospital and Pacific Hospital. These facilities serve Long Beach and the greater region.

How will this bold move impact you and your community?

» Diverse Employment Opportunities. Increased commerce, businesses, industrial and technological industries lead to a greater diversity in employment and opportunity for entrepreneurial endeavors. This is an advantage for the area workforce and local businesses due to the clustering and proximity of diverse businesses.

» Additional Facilities and Services Closer to Home. In a larger city with historic and cultural investments residents can enjoy multiple educational and cultural venues conveniently located nearby.

» Improved Campus Environments. Major employers, education and medical facilities, offices and other campus environments will be improved to become more transit and bicycle friendly, and greener through sustainabilty principles.

With a population over 460,000, Long Beach is the seventh largest city in California , and hosts over five million visitors annually.

Build Up Local Businesses and Educational Institutions

Small businesses in Long Beach strengthen the local economy and provide opportunities for people to achieve economic independence. Locally owned businesses tend to generate a greater local economic impact compared to chain stores, where revenue generally funnels out of the City. Also, local businesses invest in local people. Long Beach's eclectic mix of one-of-a-kind enterprises add to the richness of neighborhoods and inspire entrepreneurial investments.

Colleges and universities in the community contribute to economic success by deepening the skills and knowledge—human capital—of residents. Producing graduates who join the region's educated workforce is one way these institutions increase the buying, saving and investment power of younger generations. Long Beach, home of the California State University Chancellor's Office, is well positioned to continue leveraging the strengths of the existing city colleges, university and educational institutions. Finding ways to more effectively harness the potential of academic institutions can provide a promising pathway to local economic development.

Although many will arrive at regional serving facilities, educational institutions or office/business campuses by automobile, alternative forms of transportation will be provided through focused public investments (particularly with transit facilities) to further expand access. Regional facilities must also accommodate transit services, pedestrian activity, improved bicycle access and automobile access—especially in our campus environments.

How will this bold move impact you and your community?

» Diverse Local Businesses and Major Employers. A strong foundation of local businesses builds a stronger local economy, benefitting all Long Beach residents. Independent local businesses often employ an array of supporting services and buy from other local businesses.

» More Convenience and Choice. Local businesses provide greater conveniences and choices for residents in selecting goods and services over chain stores.

» Greater Flexibility and Diverse Education Options. Diverse educational institutions and lifelong learning facilities improve our access to educational programs for all life stages, improve access to job training and career pathways, and improve financial stability for families.

» Benefits to Individuals and Society. Colleges and universities improve human capital, which results in higher wages from college graduates. The heightened educational attainment results in other societal benefits, including enhancing the ability of the community to compete for economic development assistance.

» Creation of Knowledge. The symbiotic collaboration between businesses and educational facilities can produce knowledge to advance science and technology and spur innovation. New products and processes are created. This too enhances the ability of the community to realize economic growth, particularly in the knowledge economy.

California State University Long Beach had an enrollment of over 36,000 students in 2012.

Become a Smarter City

In order to achieve a competitive advantage in attracting new investment, cities must not only maintain their physical infrastructure systems, they must also invest in and accommodate new technologies that respond to the needs of technologically sophisticated companies, residents, organizations, students and schools. Investing in new technologies also offers opportunities to minimize environmental impacts by creating more efficient systems and using renewable energy sources. New technologies continue to create smarter mobility and transportation solutions, smarter information and communications networks, smarter buildings and facilities and smarter energy and utility infrastructures. Emerging technologies have the potential to reshape how we build and how we live. Ultra-low power sensors, real-time data access, wireless networks, vehicle charging stations, and web and mobile-based applications allow us to be a City on the move without leaving Long Beach.

The connected, "smart" city can utilize information to manage complexities efficiently, effectively and comprehensively, while being more accountable and accessible. While leading-edge technology is available—such as live status updates on traffic patterns and parking spaces or daily quantifying of water and power usage—even newer technologies are on the way. As Long Beach continues to develop, these technologies can provide immediate access to local information that can improve economic conditions and lifestyle quality for all Long Beach residents, merchants, students and visitors.

How will this bold move impact you and your community?

» Smarter Buildings and Facilities. Technology is available to deliver real-time energy usage consumption data to mobile device applications, empowering users to track and make decisions about how and when they use energy. Optimized power usage balances comfort in buildings with cost savings and environmental protection.

» Wired Environment. Residents in every Long Beach neighborhood could potentially connect to the Internet through broadband connections via fiber-optic cables for homes, schools and businesses, or connect wirelessly at public spaces, libraries, parks, transit stops or on the beach.

» Community Intelligence. Linking publicly available data and social network information to computers and information displays can empower neighborhoods with real-time community information while also promoting civic involvement.

Long Beach offers Wi-Fi capability at libraries and at City parks.

Provide Clean, Renewable Energy

We rely heavily on coal, oil and natural gas to fuel our homes, businesses and institutions. Fossil fuels are nonrenewable; they draw on dwindling, finite resources that can have expensive and environmentally-damaging effects. In contrast, many types of renewable energy resources—such as wind, solar and wave energy—will not run out. Solar energy is the cleanest, most abundant renewable energy source available. Wave power is an exciting emerging long-term energy source that is captured from the surface motion of waves on our beaches. Long Beach has ample supplies of both of these.

How will this bold move impact you and your community?

» Environmental Benefits. Renewable energy technologies are clean sources of energy that have a much lower environmental impact than conventional energy technologies.

» Reliable Renewable Energy Options. Renewable energy is readily available and will not run out. Other sources of energy are finite and will someday be depleted. Sunlight, or solar energy, can be used directly for heating and lighting homes and other buildings, for generating electricity and for hot water heating, solar cooling and a variety of commercial and industrial uses. There will also be more opportunities for residential solar rooftop projects as the costs for photovoltaics has become more affordable. Wave and wind energy systems need not be large; small, local networks can feed into the local grid and make Long Beach more energy independent.

» Better Air Quality. Cleaner air leads to healthier residents and a healthier planet.

» Jobs and the Economy. Most renewable energy investments are spent on materials and workmanship to build and maintain the facilities, rather than on costly energy imports. Renewable energy investments are usually spent within the United States, frequently in the same state and often in the same town. This means your energy dollars stay home to create jobs and fuel local economies rather than going to other states or nations.

» Energy Security. Use of local energy resources increases our independence from foreign oil sources.

Solar photovoltaic system atop a parking structure at Long Beach City College Liberal Arts Campus.

Prioritize Green and Healthy Living Approaches

Long Beach has already taken significant green and sustainable approaches to improving the health of residents, businesses, neighborhoods and the natural environment. The City continues to make efforts to: conserve and rely on renewable energy sources; facilitate urban agriculture and local farmers markets; counter the "urban heat island effect" by greening Long Beach's urban environment; improve alternative transportation modes such as biking, walking and transit; encourage buildings to be more energy efficient (and lead by example); move new development closer to transit infrastructure; protect the riparian, coastal and wetland environments throughout the City; conserve water; and reduce waste and storm water pollutants. The Land Use Element identifies how Long Beach will continue to promote practices that create a greener, more sustainable environment.

Healthy living initiatives help protect the environment and allow residents to make healthier choices. This includes options for healthier foods from community gardens, farmers markets and home gardens. It also includes enhancing the physical environment to increase physical exercise and assist in lowering chronic obesity rates.

How will this bold move impact you and your community?

» Cleaner Waterways. Our beaches, rivers and ocean will be less impacted by pollution, litter and trash, resulting in safer swimming and fishing conditions.

» Protection and Conservation of Natural Resources. Protecting and conserving natural resources will allow future generations to use and enjoy them.

» Accessible Healthy Food Options. Improved access to healthy and locally grown foods promotes healthy eating habits, celebrates cultural diversity, improves social cohesion and supports activities and programs for enhanced well-being.

» Physical Environment that Allows for Healthier Lifestyles. Urban environments designed to promote physical activities can lead to increases in exercise, resulting in public health benefits such as a decline in obesity.

» More Parks and Open Spaces. Additional parks and urban open spaces will allow greater access to these resources for our neighborhoods.

Urban community gardens, like this one near the intersection of Pacific Avenue and Sixth Street, provide access to locally-grown foods and promote healthy eating options.

Address and Adapt to Climate Change

This Land Use Element provides long-term policy direction for reducing the City's carbon footprint and lessening greenhouse gas emissions that contribute to climate change. The goals are to: create complete and healthy neighborhoods; guide growth toward transit-rich areas in downtown and along specific corridors; reduce automobile dependence, enhance alternative modes of transportation (e.g., biking, walking, transit); enhance established environments to be pedestrian friendly; create new open space opportunities to further enhance the urban forest and encourage green and sustainable development approaches and technologies.

Long Beach recognizes that global climate change will impact social, cultural and natural resources. As a City located on the coast, sea level rise and coastal storms could have a major impact on residents living closest to the ocean, rivers and bays. As weather-related heat waves, floods, storms, fires and droughts are becoming more frequent and destructive, it is imperative that Long Beach prepare for such events.

How will this bold move impact you and your community?

» Plan for Sea Level Rise. We will use the best available science and data to plan for and address future sea level rise. We will minimize coastal hazards through land use planning and maximize protection of coastal resources, infrastructure, established coastal neighborhoods and waterfront areas.

» Reduced Environmental Footprint. We can drive less and use Long Beach's viable transportation alternatives such as walking, biking and transit. We will embrace green infrastructure to conserve natural resources. We can maintain our homes or businesses to reduce heating and cooling use and consume energy more efficiently. We can also recycle, reuse and reduce our waste. These practices also save energy because making goods from recycled materials often require less energy than making goods from raw materials.

» Safer Environment. We will prepare for major events and natural disasters. Our police, fire and other emergency personnel will be better prepared to respond and react to hazards and disasters.

» Resilient City. We will become more resilient to economic and environmental stresses. We will be able to bounce back more quickly and efficiently upon facing major challenges.

Local Long Beach power plants are upgrading their equipment to reduce harmful emissions that contribute to global warming and to eliminate the use of water in cooling machinery.

Celebrate and Support Our Diversity

Diversity refers to human qualities that are different from our own and those of groups to which we belong, but that are manifested in other individuals and groups. Dimensions of diversity include age, ethnicity, gender, race, sexual orientation, physical abilities/qualities, educational background, income, marital status, military experience, parental status and religious beliefs. As one of the most diverse large cities in the United States, Long Beach celebrates the traits and characteristics that distinguish our community from others; we embrace and promote diversity as an advantage in bringing people and neighborhoods together and in creating a richer life experience.

Unfortunately, some of Long Beach's most diverse neighborhoods are exposed to the environmental impacts associated with operations from the ports of Long Beach and Los Angeles, and as well as heavy industrial uses in adjacent jurisdictions. This has resulted in disproportionately adverse health effects on neighborhoods that consist largely of minority and low-income populations. It is vital to implement solutions to help lessen the adverse health impacts confronting these neighborhoods.

How will this bold move impact you and your community?

» Increased Accessibility and Accountability. Greater transparency of information and the decision-making process creates accessibility and accountability between the community and government.

» Environmental Justice. Improving the environmental health of neighborhoods with a concentration of minority and low-income populations could lead to better health conditions and lower rates of illness. This plan focuses on providing safe housing and employment opportunities, addressing inequities in physical infrastructure and in opportunities for mobility, employment and health, as well as improving connections among and between all neighborhoods in the City.

Long Beach has been recognized as the one of the most diverse cities in the nation. It is also home to the largest Cambodian population outside of Southeast Asia. Many Long Beach Cambodians celebrate their culture through events and celebrations.

This page intentionally left blank.

Context

Understanding Long Beach

3

"Observe always that everything is the result of change, and get used to thinking that there is nothing Nature loves so well as to change existing forms and make new ones of them."

Marcus Aurelius
Emperor of Rome

3

Context

Understanding Long Beach

- General Plan Framework and Regulatory Context 27
  - » Relationship to Other Planning Disciplines 27
  - » State General Plan Requirements 27
  - » State Legislative Acts and Their Impacts on Land Use 28
  - » Long Beach Local Coastal Program 30
- Our Region. Our City. 31
  - » Overview 31
  - » Long Beach Land Use Today 31
  - » Regional-Serving Facilities 36
- Heart and Soul of Long Beach: Our Neighborhoods 40
  - » Neighborhoods and Community Plan Areas 40
- Long Beach Economy 44
  - » Top Industry Sectors 44
  - » Workforce Characteristics 45
  - » Fiscal Sustainability 46
- Sustainability and the Natural Environment 47
  - » Natural Environment in Long Beach 47
  - » Watersheds Lead to Long Beach 48
  - » Environmental Sustainability 49
  - » Climate Change and Sea Level Rise 50
  - » Resilient City 50
- Healthy Communities 51
  - » Active Living 51
  - » Access to Healthy foods 52
  - » Environmental Justice 53
- Smart City 55
  - » Facets of a Smart City 55
- Addressing Our Challenges 56
  - » Challenges That Could Affect Long-Term Growth 56

GENERAL PLAN FRAMEWORK AND REGULATORY CONTEXT

The Land Use Element sets forth the policy framework to shape the physical environment of Long Beach through comprehensive guidance on urban form and land use.

Relationship to Other Planning Disciplines

Land use planning works in concert with other planning disciplines to achieve broader community goals and create great places. Land use and mobility principles together shape urban form. This Land Use Element is designed to be compatible with, and complementary to, the recently-completed Mobility Element. Land use planning and economic development initiatives must be coordinated so that land use regulations support the education, industrial and commerce sectors of the economy. Land use and mobility depend upon one another to create efficiencies in the movement of people and goods. Transit operations work most effectively when land use policies allow for greater densities around stations. Land use and urban design are intertwined; together they distinguish and define distinct districts and neighborhoods. Land use and historic preservation are also connected; historic buildings contribute character and allowing for their adaptation and reuse preserves our cultural history while promoting sustainable building practices.

State General Plan Requirements

Cities and counties in California are required to prepare and adopt a general plan to serve as a comprehensive guide for the long-term development of a community. According to Section 65302 of the California Government Code, a community's general plan must address seven primary topics: land use, circulation (mobility), housing, conservation, open space, noise and safety.

The Long Beach General Plan contains these seven elements that correspond to those required by the state. It also includes optional subject matter that the City considers important to Long Beach: Historic Preservation, Air Quality, Seismic Safety, Urban Design and the Local Coastal Program.

To conform to the State's General Plan Guidelines, the Land Use Element is required to, at a minimum, address the following topics:

- Distribution of housing, business, industry, open space and public facilities.
- Long-term development growth.
- Residential and population density and building intensity.
- Regional-serving facilities, including the Port of Long Beach (POLB) and the Long Beach Airport.
- Location of educational facilities and public buildings.
- Land uses in areas subject to flood hazards.

State law limits the number of times a jurisdiction can amend their general plan. Section 65358 of the California Government Code authorizes four amendments per calendar year to only the mandatory elements of the General Plan. Each amendment may include more than one change to the General Plan.

General Plan Element Consistency

The Land Use Element must be internally consistent with each of the other elements of the General Plan, most specifically the Housing and Mobility Elements. This Land Use Element is designed to be compatible with, and complementary to, the Long Beach Mobility and Housing Elements. The Land Use Element establishes development patterns and densities/intensities that support the Mobility Element's strategies for reducing reliance on the automobile. To support the Housing Element objectives, the Land Use Element designates properties for varied densities that can support all types of new housing, including housing affordable to lower income households. Land use policy directs growth to transit-oriented districts and along corridors, and provides for a wide variety of mixed uses and activities to support smart growth.

General Plan Element Guidelines

The Governor's Office of Planning and Research (OPR) is responsible for preparing General Plan Guidelines, the "how to" resource for drafting a general plan. The General Plan Guidelines were updated in 2017.

State Legislative Acts and Their Impacts on Land Use

California Government Code Section 65300 defines the components, processes for preparation, approval and administration of general plans. The following summarizes important legislative requirements influencing the content of this Land Use Element.

Sustainable Communities and Climate Change

The Global Warming Solutions Act (Assembly Bill 32) requires the California Air Resources Board (CARB) to establish a cap on statewide greenhouse gas (GHG) emissions and a regulatory framework to achieve the corresponding reduction target. CARB has set out an outline of regulations, market mechanisms and other actions to reduce emissions and achieve the target of reducing GHG emissions to 1990 levels by 2020. According to CARB, passenger vehicles are the number one emitter of GHG emissions in California, and the number and length of vehicle trips are primarily influenced by the availability of alternative transportation modes and the mix and densities of land use development that generate trips. Thus, changing behavior in vehicle use and land use development patterns are recognized as two of the State's primary strategies to achieve GHG emission reduction targets.[11]

Senate Bill 375 supports the goals of Assembly Bill 32 by requiring CARB to establish regional targets for the reduction of GHG emissions from passenger vehicles. The law would achieve this objective by requiring integration of planning processes for transportation, land use and housing. Senate Bill 375 creates California Environmental Quality Act (CEQA) streamlining incentives for projects that are consistent with the regional Sustainable Communities Strategies (SCS) such as transit-related, mixed-use and comparable projects that reduce vehicle trips and GHG emissions. [12]

Complete Streets

The California Complete Streets Act (AB 1358) stipulates that we must fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity. In order to do this, planners must find innovative ways to reduce vehicle miles traveled and to shift from short trips in the automobile to biking, walking and use of public transit. Complete Streets strategies require planners and engineers to accommodate a variety of transportation modes along the entire street right-of-way, in addition to automobiles.[13] Although these objectives are primarily addressed in the Mobility Element, when considering approaches to connect land use and mobility policies and adding character features related to pedestrian friendly environments, Complete Streets strategies apply to the Land Use Element as well.

Housing

California law requires all cities to have a Housing Element that plans for the accommodation of population and employment growth. The Land Use Element must be consistent with the Housing Element since both provide the residential uses and density range for housing development in the City. See Appendix "Anticipated Buildout" for more details and current allocations.

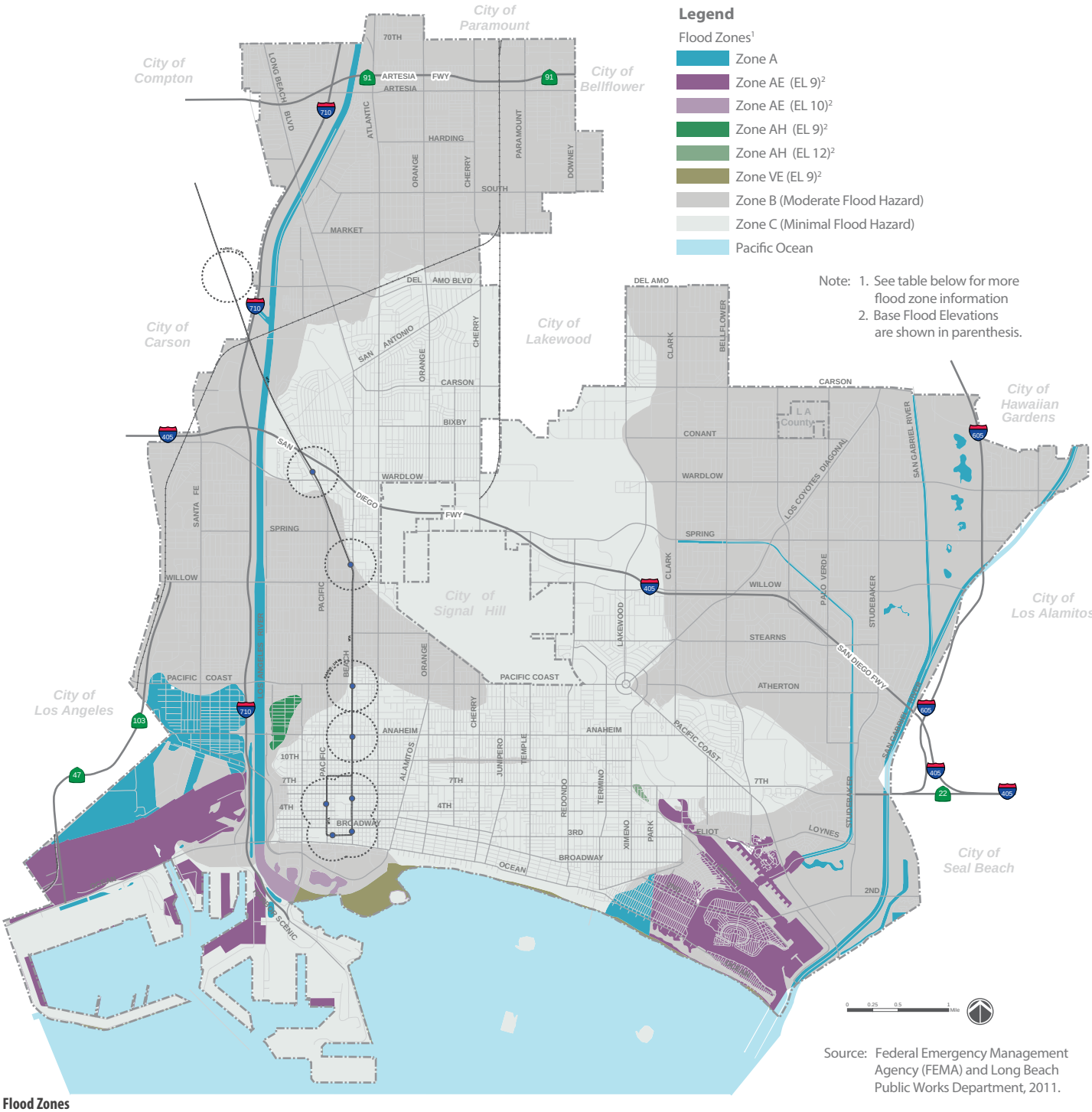
Flood Control Management

Assembly Bill 162, Chapter 369 of the Statutes of 2007, requires general plan elements to fully address flood control management. This Land Use Element identifies areas subject to flooding, as identified by flood plain mapping prepared by the Federal Emergency Management Agency or the Department of Water Resources. Map LU-1 (Federal Emergency Management Agency Flood Zones) identifies the flood zone areas.

Environmental Justice

Senate Bill 1000, requires that general plans include goals, policies, and objectives pertaining to environmental justice. The purpose of the bill is to identify disadvantaged communities and to put forward strategies to reduce unique or compounded health risks to these communities, identify objectives and policies to promote civil engagement in the public decision-making process, and identify objectives and policies that prioritize improvements and programs that address the needs of disadvantaged communities.

Map LU-1
Federal Emergency Management Agency Flood Zones



Source: Federal Emergency Management Agency (FEMA) and Long Beach Public Works Department, 2011.

Flood Zones

Zone	Areas within 1% Annual Chance of Flooding (100-year flood) or 0.2-percent-annual-chance (500-year)	Base Elevation	Insurance Requirements and Flood Management Standards	Risk
Zone A	100-year flood, 26% chance of flooding over the life of a 30-year mortgage	N/A	Mandatory	High
Zone AE	100-year flood	9 ft. or 10 ft.	Mandatory	High
Zone AH	100-year flood, chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet	9ft. or 12 ft.	Mandatory	High
Zone VE	100-year flood, coastal areas with 26% chance of flooding over the life of a 30-year mortgage	9 ft.	Mandatory	High
Zone B	Areas between the limits of the base flood and the 500-year flood	N/A	Available	Moderate
Zone C	Outside the 100-year flood zone and has higher elevation of 500-year flood	N/A	Available	Low/Minimal

Long Beach Local Coastal Program

In 1980, Long Beach was the first city in California to adopt a local coastal plan into its General Plan. The Local Coastal Program (LCP) applies to areas south of the City's coastal zone boundary as depicted in Map LU-2 (Local Coastal Zone). Within this area the California Coastal Act outlines goals for the coastline and policies to protect and enhance coastal resources. The City's LCP adopted these goals and policies which aim: to maximize public access to recreational opportunities along the coast; protect lower cost visitor, housing and recreational facilities; and increase recreational boating and other uses of coastal waters. The LCP is unique in the General Plan in that it provides both the land use plan and the regulations or zoning standards that support its implementation. As such, everything in the City's Land Use and other Elements of the General Plan must be consistent with the provisions of the LCP. Because the LCP was adopted some time ago, and because it contains the zoning specifics within it, the LCP has been amended over the years to keep it current. This Land Use Element recommends that the LCP be amended once again to update the plans for the Waterfront PlaceType areas of SEASP and Belmont Pier & Pool Complex. These two areas stand out as underutilized coastal resource areas that could greatly benefit the public through the redevelopment of some sites, and the preservation and restoration of remaining coastal wetlands.

Map LU-2
Local Coastal Zone

OUR REGION. OUR CITY.

Overview

The City of Long Beach is located along the shores of the Pacific Ocean, where the Los Angeles and San Gabriel Rivers flow into San Pedro Bay. Downtown Long Beach is located approximately 24 miles south of downtown Los Angeles and approximately 25 miles north of Santa Ana, both county seats of their respective counties. This location—along the ocean and located between the central business districts of Los Angeles and Orange counties—has proven to be an economic and geographic advantage.

Long Beach has a long, rich history characterized by cultural diversity, multiple industries, a vibrant downtown, appealing neighborhoods, lively business corridors and districts, a regionally significant airport, a world-class port and an assortment of colleges, including California State University at Long Beach (CSULB). Long Beach combines big city amenities with small-town appeal.

Long Beach is home to numerous small businesses and several larger corporations representing many industry sectors. Its diverse economy and workforce have supported the region. Although Long Beach's historical strength has been in shipping and manufacturing, since the late 1990s the City's economic position has transitioned to a knowledge-based economy. Top employment sectors include health care; manufacturing; professional, scientific and technical services; hospitality; wholesale, transportation/warehousing, utilities; food service and retail.

As of 2016, with 46,793 residents and over 163,19 households, Long Beach was the second largest city in Los Angeles County, following the City of Los Angeles.[14] As Long Beach moves toward 2040, the Southern California Association of Government's (SCAG) Integrated Growth Forecast for the 2016/2040 Regional Transportation Plan indicates that Long Beach will grow nearly four percent to a population of 484,485 residents.[15] That is over 18,000 new persons living in Long Beach. During this same time frame, the City is projected to add 11,700 new households and 28,500 new employees. Given that 12.2% of existing households are experiencing overcrowding, combined with the need to accommodate population growth with new housing units, it is anticipated that a total of 28,524 housing units are needed by 2040.

With this new growth comes the challenge of accommodating new housing and employment while minimizing impacts to existing residents, infrastructure and services. This Land Use Element will guide the City in accommodating new growth while pursuing strategies to improve the quality of life through healthier, complete neighborhoods and rehabilitated natural environments.

Table LU-1: Long Beach Growth In Population, Households, and Employment Between 2012 and 2040

	Population	Households	Employment
2012	466,255	163,794	153,154
2020	478,346	170,838	165,800
2035	481,463	173,188	175,546
2040	484,485	175,538	181,665
Percent Change: 2012-2040	3.9%	7.2%	18.6%

Source: City of Long Beach and Southern California Association of Governments (SCAG), 2015.

Long Beach Land Use Today

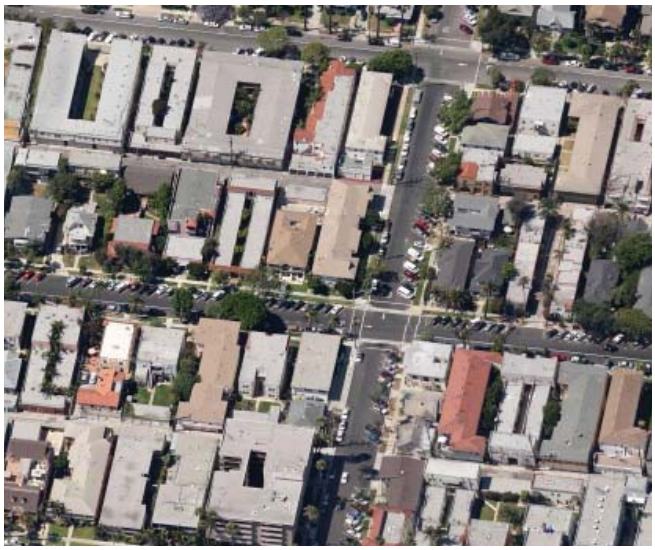
Before we plan for new land uses to accommodate growth, it is important to understand how the City is developed today. This section provides a snapshot of land uses in Long Beach in 2016.

Residential Uses

Residential uses represent the predominant land use in Long Beach and occupy over 44 percent of the land area in the City. Neighborhoods vary widely by residential types and densities (dwelling units per acre) based on location and the time period during which the buildings were constructed. As an example, the variety in types and density range from the condominium towers along Ocean Boulevard, which can tower over 250 feet in height with densities up to 249 dwelling units per acre, to the single-family homes in El Dorado Estates, which are typically two stories in height built at a density of seven units per acre.

Residential unit types include detached single-family homes; mixed-style homes consisting of semi-attached housing units such as duplexes, triplexes, townhomes and row houses; and moderate- to high-density buildings consisting of attached multi-unit housing such as apartments and condominiums. Within Downtown, housing consists of multi-unit buildings at higher densities to respond to available transit and services within walking distance. Residential types throughout the downtown include urban high-density apartments, condominiums and mixed-use buildings.

Low-density single-family residential uses.



Moderate-density multi-family residential uses.

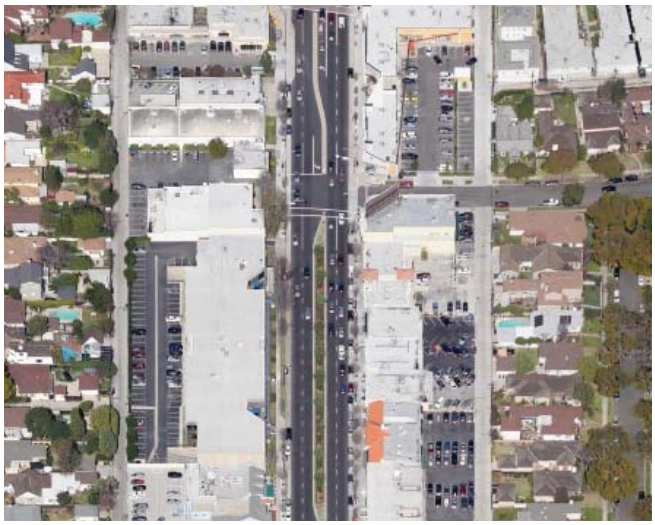
High-density residential towers in Downtown Long Beach.

Several mobile homes parks are still found in the City, dating from the mid-twentieth century. At that time this housing type was the nearest affordable equivalent to a detached single-family home. More unusual housing consists of live-aboard boat slips in the Alamitos, Rainbow Harbor and Shoreline marinas where boats are homes.

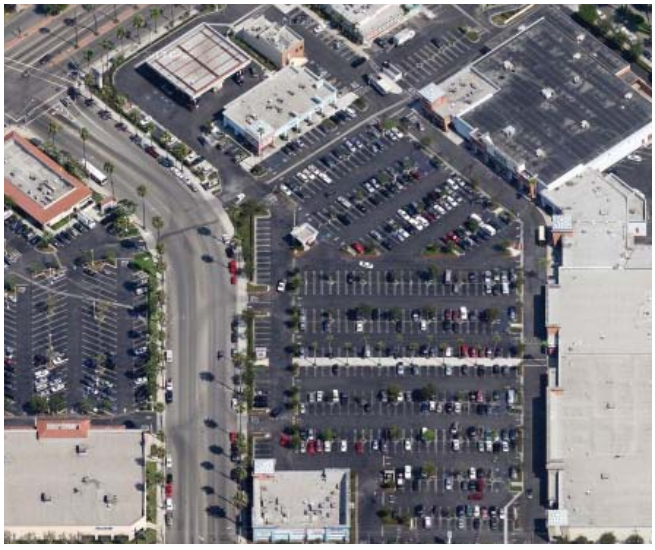
Residential types vary by the time period the housing unit was constructed. Between 1900 and 1930, smaller single-family homes were built individually using different architects, mail order catalogs or home builders. These homes were on smaller lots ranging from 1,500 to 6,000 square feet and typically included smaller detached carriage garages, as vehicles were not widespread until years later. These homes were common in the historic areas of Long Beach such as the California Heights, Drake Park, Willmore City, the Wrigley neighborhoods, Rose Park and Belmont Heights.

Homes built between the 1940s and 1950s were typically planned as large-scale, mass-production units constructed by a single developer or housing builder. The building boom during this decade accommodated the post-war demand for family housing. Lot sizes in these areas range from 5,000 to 8,000 square feet. Housings units on the upper end of the lot size were designed as estate housing, such as those in the Park Estates neighborhood. This mass production allowed a larger quantity of homes to be built at a lower price point. These prototypical suburban neighborhoods covered large land areas and the development pattern responded to the country's new wealth and growing love affair with the automobile, as evident in the Eastside and Northern neighborhoods. Builders targeted returning war veterans who were able to acquire home loans from the Federal Housing Administration. The automobile dominated the transportation mode for most households, homes primarily included one- or two-car garages, and the neighborhoods were separated from auto-oriented commercial shopping centers.

Between the 1960s and 1980s, many of the larger swaths of vacant land in Long Beach for housing tracts had been developed. As a result, developers and investors concentrated on creating urban neighborhoods by converting small, single-family units to larger apartment



Neighborhood commercial uses.



Auto-oriented shopping center.

Downtown urban mixed-use shopping center.

complexes. Today, many older neighborhood blocks consists of single-family bungalows and smaller apartment buildings.

Commercial Uses

Commercial uses consist of major commercial corridors, traditional retail strip commercial, pedestrian-oriented neighborhood retail areas and auto-oriented shopping centers. Commercial uses represented 8 percent of the total land uses in Long Beach as of 2016.

Downtown is currently the primary commercial hub of the City. Between 1900 and 1950, downtown was the thriving retail, service and entertainment center of Long Beach. Beginning in the early 1900s, the downtown exploded as a resort and commercial center. It included The Pike (a seaside roller coaster) amusement center, retail shops and large department stores (e.g., Walker's, Desmonds, Howard Amos and Buffums). Today, the downtown has emerged as a renewed retail and entertainment center for Long Beach, with various restaurants and shops in Shoreline Village, the East Village, The Pike at Rainbow Harbor and along Pine Avenue. CityPlace Shopping Center, occupying six bocks within downtown, is an urban retail mixed-use center with residential uses, retail shops and restaurants.

Long Beach also has many smaller commercial districts that serve surrounding neighborhoods. These districts include Second Street in Belmont Shore, Broadway in Belmont Heights, 4th Street in Rose Park South, Atlantic Avenue in Bixby Knolls, as well as Atlantic Avenue in North Long Beach, Norse Way and Viking Way in Lakewood Village, Lakewood Boulevard and Stearns Avenue in Artcraft Manor and Bellflower Boulevard in Los Altos. These commercial districts are more pedestrian friendly, with buildings located along the street frontage. Parking areas—where provided—occur on the street or in small parking lots behind commercial buildings.

Commercial corridors are also prevalent in Long Beach; they connect to downtown Long Beach following major transit lines. Major north-south running commercial corridors linking to downtown include Long Beach Boulevard, Pacific Avenue, Atlantic Avenue and Alamitos Avenue. Other north-to-south commercial corridors are Cherry Avenue and Redondo Avenue. Major east-west aligned commercial corridors include Anaheim Avenue, Pacific Coast Highway and 7th Street. Parking for these corridors is provided on the street, where available, or on small lots at the rear of

commercial buildings.

From post-World War II to the present, commercial shopping centers were built to target suburban neighborhoods in Long Beach. Shopping centers are largely vehicle oriented; they occupy expansive land areas to accommodate vehicle surface parking lots and larger commercial building footprints. These centers are located along major arterial roadways or adjacent to freeways for higher vehicular access and visibility. Examples of shopping centers include:

» Los Altos Gateway and Los Altos Center.
» Marina Pacific and Market Place Long Beach in the SEASP area.
» Long Beach Town Center off the I-605 freeway.
» Circle Center and Circle Marina Center near the Traffic Circle.
» Bixby Knolls Shopping Center.

Office Uses

Small office uses can be found throughout the City's commercial corridors and centers. Larger office buildings, including Class A offices, are primarily located in downtown, the Long Beach Airport area (Kilroy Airport Center and Douglas Park) and Bixby Knolls (at Long Beach Boulevard and San Antonio Drive).

Downtown Long Beach is a major employment center consisting of a variety of large and small office buildings within an urban setting. Office building heights range from two to 30 stories. Office building parking is typically located within parking structures. Downtown roughly accounts for 4.2 million square feet of office square feet, with Class B buildings accounting for more than half of the space, and Class A comprising approximately one third of the inventory.

Kilroy Airport Center, located between Long Beach Airport the I-405 freeway, primarily consists of Class A office buildings located within a suburban office park setting. The office buildings range from two to eight stories. Although there is one large parking structure for the center, the majority of parking is located in surface lots.

Douglas Park, located just north of the Long Beach Airport, is a mixed-use campus consisting of office, industrial/flex and corporate office spaces. The site once housed a former aerospace and production campus.

Kilroy Airport Center office buildings.

Office Classifications

Building classifications are used to differentiate office buildings. Office buildings are generally classified as being either a Class A, B, or C building. There is no definitive formula for classifying a building, but the general characteristics of each are as follows:

» **Class A.** These buildings represent the highest quality buildings in their market. They are generally the most attractive buildings with the highest quality construction and infrastructure.

» **Class B.** Class B buildings are generally a little older than Class A buildings, but still have good quality management and tenants. Well-located Class B buildings can be returned to their Class A glory through renovations such as facade and common area improvements.

» **Class C.** The lowest classification of office building and space is Class C. These are older buildings (usually more than 20 years), that are located in less desirable areas and are typically in need of extensive renovation.

Boeing's Douglas Center, a commercial aviation services office campus, is located across the street from Douglas Park at Lakewood Boulevard and Carson Street. The campus is located next to one of Boeing's manufacturing facilities and includes three office buildings ranging from two to eight stories and a large parking structure.

Older industrial district adjacent to the Port of Long Beach.

Newer industrial district within a business park setting.

Long Beach Corporate Center is an eight-story office building on Long Beach Boulevard just north of San Antonio Drive in the Bixby Knolls neighborhood.

Industrial Uses

Industrial uses occupy about 13 percent of the land area in the City. Varied industrial districts have been established throughout Long Beach, particularly near the port, rail lines and freeways. Typically, older industrial districts are located adjacent to residential uses, reflecting early land use practices that placed employment districts near worker housing These employment districts were comprised primarily of smaller-scaled operations occupying small buildings. Newer industrial districts are typically in clusters with larger parcels and occupying larger buildings. These are generally separated from homes and commercial districts. The industrial district adjacent to the POLB contains many port-dependent and port-oriented marine businesses.

In the Westside area, within the Lower Westside and Washington neighborhoods, is an older industrial district. Industrial uses proximate to the POLB and the I-710 freeway consist of complementary uses for port operations, as well as small light industrial operations. Businesses include trucking, packaging and assembly, light manufacturing, fabrication shops, food processing, auto and marine repair shops, and outdoor storage areas. This eclectic mix of industrial uses, with small lots and outdated buildings, is a testament to the industrial roots that helped Long Beach grow, providing ancillary services to the port and the former naval shipyard. An older, smaller industrial district located in the Zaferia neighborhood along the former Pacific Electric Railway line in Central Long Beach provides industrial neighborhood services. Buildings are small, ranging in size from 2,000 to 10,000 square feet with limited parking and outdoor storage areas. Common industrial uses include small print and graphic shops, design studios, small warehouses, linen services, small manufacturing operations and auto repair shops. Industrial buildings can be found near residential uses, often sharing property lines.

A newer, modern industrial district is located near the junction of the I-405 and I-710 freeways. It consists of office and warehouse/distribution uses within a business park setting. The Long Beach Unified School District offices are located here, along with a corporate office campus, a sales and distribution operation, warehouses and offices. Lots are generally bigger and have large buildings footprints as compared to the older industrial areas.

Another industrial district is located in North Long Beach, along Cherry Avenue and Paramount Boulevard. This district consists of heavy industrial uses such as a truck parts manufacturing, plant and petroleum storage, and refinery facilities. Other industrial uses include manufacturing, freight and distribution, aggregate processing, warehouses, transit operations, outdoor storage and trucking. These industrial uses have access to a Union Pacific Railroad line.

Open Space and Recreational Uses

Long Beach contains a mix of open space and recreation uses, from small mini parks to large special use areas. Major open space areas in Long Beach include El Dorado Regional Park, the Los Angeles and San Gabriel Rivers,

eight miles of beaches and shoreline, transmission power line rights-of-way, cemeteries, golf courses, marinas, bays and wetlands.

Long Beach has over 100 public parks with 25 community centers, two major tennis centers, five municipal golf courses and a marina system. The City's publicly-owned golf course and marina systems are the largest in the nation. More than 2,750 acres within the City's 50 square miles are developed for recreation. Recreation uses occupy five to six percent of the land in Long Beach. Utility corridors occupy another six percent.

Public Facilities and Institutional Uses

Long Beach supports a wide variety of public facilities and institutional uses, including civic uses, schools, museums, colleges and universities, medical facilities, libraries, utility and infrastructure support facilities, and community centers. Institutional uses occupy about seven percent of the land in Long Beach.

Regional-Serving Facilities

Regional-serving facilities are those facilities, businesses and operations that not only serve the City of Long Beach, but also the region and parts of the nation. At all of these facilities, green building designs and operational initiatives are being pursued in order to reduce environmental impacts. See Map LU-3 (Regional-Serving Facilities) for location of these regional-serving facilities. Each of the Regional-Serving Facilities have their own master plans.

Port of Long Beach

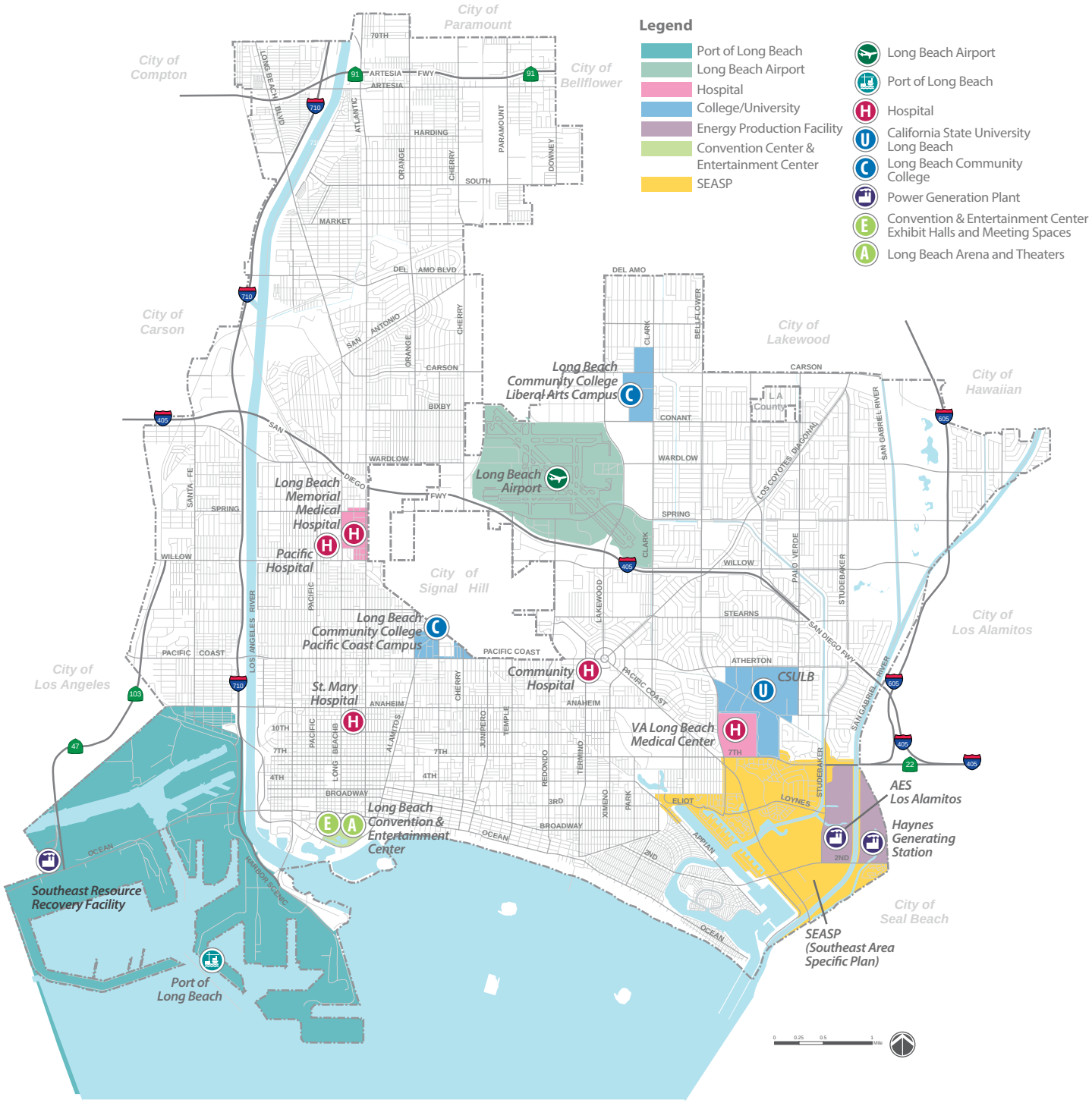
The Port of Long Beach (POLB), located in San Pedro Bay, is the second largest container port in the United States, behind the adjoining Port of Los Angeles (POLA). Although the two ports compete for business, they cooperate on security, infrastructure projects and environmental programs. Combined, the number of cargo containers shipped through these two ports ranks as the world's sixth busiest port complex.

The POLB is also a key transportation hub in the global trade marketplace, with more than $140 billion worth of cargo moving through the Port every year, from electronics and furniture to vehicles and petroleum. East Asia accounts for about 90 percent of trade shipments through the Port. Top trading partners are China, South Korea, Hong Kong and Japan.

The POLB is managed and operated by the City of Long Beach Harbor Department and governed by the Long Beach Board of Harbor Commissioners, whose five members are appointed by the mayor of Long Beach and

Port of Long Beach.

Map LU-3
Regional-Serving Facilities



confirmed by the City Council. The Board creates policies and appoints the Port Executive Director, the top official at the 400-employee Harbor Department.

The POLB is committed to becoming the most environmentally-friendly port in the world. The Board of Harbor Commissioners has adopted the Green Port Policy which sets the framework for the Port's environmental protection efforts as well as its day-to-day operations. Through the Green Port Policy, the Port is taking steps to protect wildlife habitat, improve air and water quality, clean soil and undersea sediments, and create a sustainable port culture.

Long Beach Airport.

Long Beach City College Liberal Arts Campus.

CSULB Student Recreation & Wellness Center.

Long Beach Airport

The Long Beach Airport, located just north of I-405 freeway between Lakewood Boulevard and Cherry Avenue, is situated halfway between the major business and tourism areas of Orange and Los Angeles counties.

Long Beach Airport covers 1,200 acres and has five runways, the longest at 10,000 feet. The airport is a hub of corporate activity, as well as being one of the nation's busiest airports in terms of general aviation. Scheduled airlines also provide passenger and cargo service.

Over 200 businesses are located on airport property, including nearly 100 acres of mid-rise business park and hotel uses; several fixed-base aviation operators and specialty aviation service companies; and Gulfstream Aerospace aircraft service centers.

The Airport has taken steps to become "greener," including installing a solar forest (solar panels fixed on poles), reducing water consumption and preventing debris and pollution from entering the airport's storm drains, streets and catch basins.

Colleges and Universities

Long Beach is home to both public and private colleges. California State University at Long Beach (CSULB) is the largest with an enrollment of nearly 37,500 students in 2015. As the second-largest campus of the California State University system, CSULB offers over 200 undergraduate, graduate degree programs, as well as doctoral and teaching credential programs. The 320-acre campus, located at 7th Street and Bellflower Avenue, includes the iconic Walter Pyramid, a 5,000-seat multi-purpose indoor stadium. As part of the movement toward more sustainable campus operations, CSULB has implemented measures, including solar panels, water conservation and energy management programs.

Long Beach City College, established in 1927, consists of two campuses. The Liberal Arts Campus (112 acres) is located in eastern Long Beach near Lakewood Village at Carson Street and Clark Avenue. The Pacific Coast Campus (30 acres) is located in central Long Beach on Pacific

Coast Highway and Orange Avenue. As of 2013, student enrollment at both campuses consisted of over 31,500 students and the colleges employed over 1,400 full-time and part-time faculty and staff.

The City also includes an assortment of private colleges and universities, including American Career College, DeVry University, WyoTech, Charter College, National University and American University of Health Sciences.

Energy Production Facilities

Several large power generation plants are located in Long Beach. The AES Los Alamitos and Haynes Generating Station power plants are located at the far southeast corner of the City, and the Southeast Resource Recovery Facility is located at the POLB.

AES Los Alamitos is a 2,000-megawatt natural gas–fueled power plant, located off the San Gabriel River between 7th and 2nd Streets, which provides electricity to surrounding communities and the region. As a source of clean and reliable electricity, AES Alamitos generates enough power to light some two million California homes and businesses, and helps create hundreds of direct and indirect local jobs. In the early 2000s, AES upgraded emission control equipment to reduce mono-nitrogen oxides and carbon monoxide emissions.

The Los Angeles Department of Water & Power (LADWP) operates the Haynes Generating Station. Built in the 1960s, the facility is a natural gas and steam power plant located across the San Gabriel River from AES Los Alamitos. The station consists of six generating units with a combined capacity of 1,600 megawatts. In 2005, LADWP modernized Units 3 and 4. In 2012, LADWP began taking several old units (Units 5 and 6) out of commission and rebuilding new, more energy-efficient facilities. These improvements are aimed at increasing fuel efficiency, lowering fuel costs, and reducing the use of ocean water to cool the facility.

The Southeast Resource Recovery Facility, located on Terminal Island, supports City of Long Beach sanitation and Los Angeles County sanitation districts. The facility processes municipal solid waste to generate energy, with enough power to meet the needs of approximately 35,000 homes. The energy generated is used to power the facility, and the rest is sold to Southern California Edison.

Regional Health Care Facilities

There are several major medical centers located in Long Beach serving the subregion. They include the following:

» **Long Beach Memorial Medical Center.** Founded in 1907 as Seaside Hospital, this facility moved to its current Long Beach Boulevard location in 1960. The facility is a 420-bed hospital with numerous medical office buildings located in a campus setting. Miller Children's Hospital is also located at this medical campus.

» **Veterans Administration Long Beach Medical Center.** This 237-bed hospital provides a wide range of medical services for veterans in Southern California. The hospital campus conveniently adjoins the CSULB campus.

» **St. Mary Medical Center.** Located at 1050 Linden Avenue, this facility was founded in August 1923 and continues to serve the healthcare needs of Long Beach and the surrounding communities.

» **Pacific Hospital of Long Beach.** Located at 2776 Pacific Avenue, this full-service, fully accredited teaching hospital includes over 180 licensed acute care beds.

LADWP Haynes Generating Station.

Long Beach Memorial Medical Center.

HEART AND SOUL OF LONG BEACH: OUR NEIGHBORHOODS

Long Beach is home to many neighborhoods; in fact, 70 distinct neighborhoods have been identified, ranging in size, shape, original era of development, function and form. These neighborhoods comprise the heart and soul of the City. Locals know that these diverse, vibrant neighborhoods are what make Long Beach a special place.

Neighborhoods and Community Plan Areas

While residents have identified our 70 neighborhoods, for the purposes of this Land Use Element they are categorized by nine "community plan areas." See Map LU-4 (Community Plan Areas and Neighborhoods). The community plan areas are defined by strong physical boundaries such as freeways, rivers, city boundaries and railroad tracks. Neighborhoods within a community plan area often share neighborhoods issues (e.g., lack of open space or neighborhood markets).

North Long Beach

The North Long Beach Community Plan Area is located east of the I-710. North Long Beach includes the residential neighborhoods west of Cherry Avenue and north of the Union Pacific Railroad (UPRR). North Long Beach primarily consists of industrial uses west of Cherry Avenue.

North Long Beach is mostly residential with some industrial and commercial districts. Along with Jordan High School, the neighborhood has a dozen public middle and elementary schools. A business and retail district on Atlantic Avenue between Harding Street and Market Street serves the neighborhoods. More intense regional-serving retail and office activity occurs along Artesia and Long Beach Boulevards, and Cherry Avenue. Industrial businesses, along the eastern edge of North Long Beach between Cherry Avenue and Paramount Boulevard, have access to the UPRR tracks. Several large heavy industrial uses are located here, including a Toyota parts manufacturing plant and petroleum-related refineries and tank farms.

Tree-lined 63rd Street in the Deforest Park neighborhood.

Bixby Knolls

The Bixby Knolls Community Plan consists of California Heights, Los Cerritos, Bixby Knolls, Bixby Highlands, Scherer Park, Ridgewood Heights and Ranton Circle neighborhoods. It is bounded by the I-405 freeway to the south and the UPRR to the north. The Bixby Knolls area has a rich historical background from its beginnings as the prominent farming community of Rancho Los Cerritos. The homes in these neighborhoods were custom built between the 1920s and 1940s. Many are characterized by the distinct historic residential architecture that remains today. The Atlantic Avenue retail corridor between San Antonio Drive and the I-405 Freeway is a pedestrian-friendly area lined with retail shops, neighborhood-serving commercial services and restaurants. The Long Beach Boulevard corridor includes professional office buildings, financial institutions and neighborhood-serving commercial uses.

Westside and Wrigley

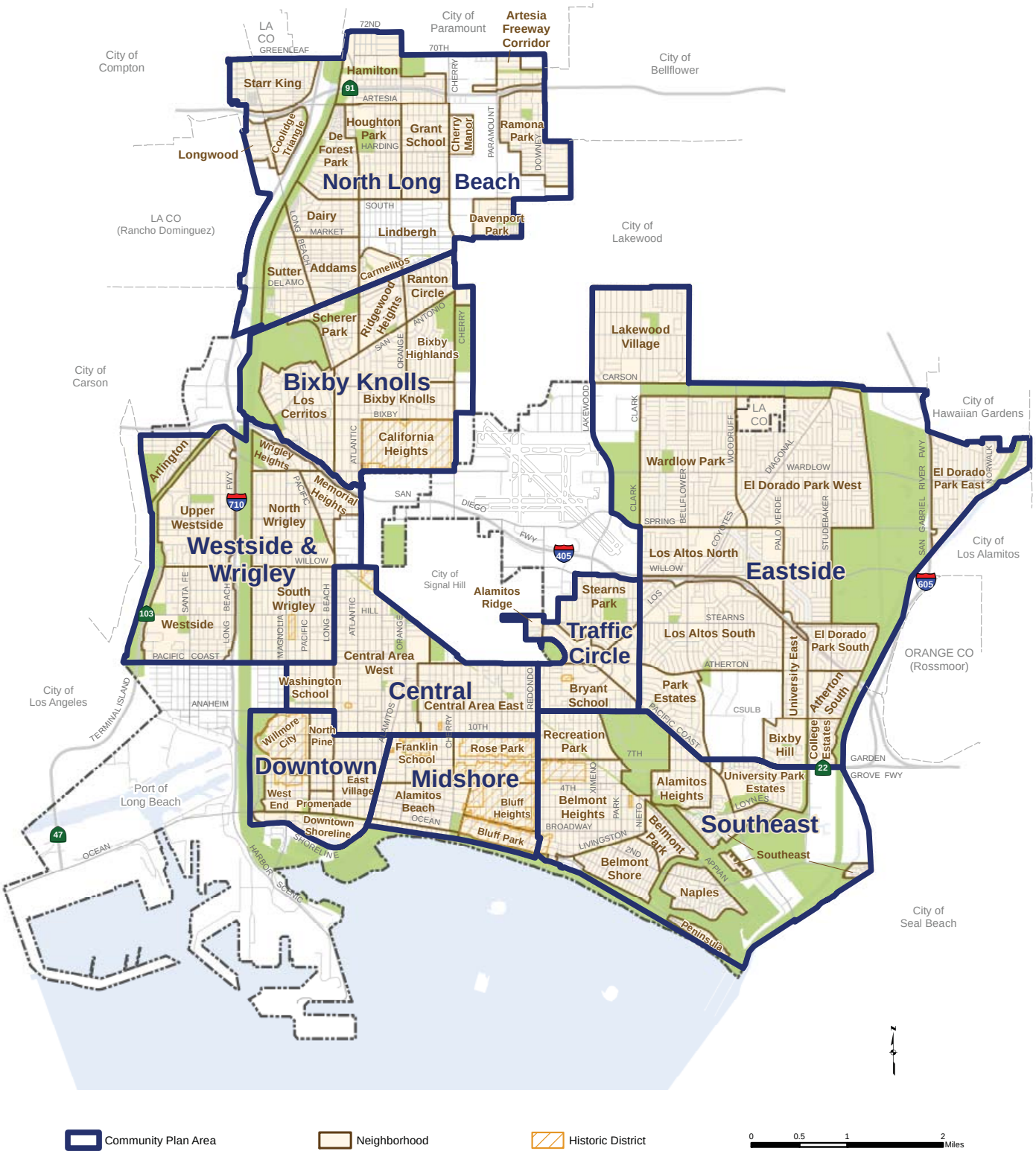
Westside is located west of the I-710 freeway, consists of the Westside and Arlington neighborhoods. These Westside neighborhoods historically were working-class neighborhoods due to their proximity to the POLB and the large Shell Oil refinery in nearby Wilmington. Many older single-family homes built between the 1920s and 1940s remain. A large U.S. Navy housing complex once stood in the neighborhood on Santa Fe Avenue near Pacific Coast Highway. Cabrillo High School now occupies the site, in addition to The Villages at Cabrillo housing and the Long Beach Jobs Corps Center.

Wrigley is located east of the I-710 freeway and west of Long Beach Boulevard. The Wrigley neighborhood was one of the first communities in Long Beach. Established in 1905, it features a distinctive grid street pattern.

Eastside

The Eastside Community Plan Area is bounded by the cities of Los Alamitos and Hawaiian Gardens to the east, the city of Lakewood to the north and SR -22 to the south. Eastside is bounded by the Pacific Coast Highway and 7th Street to the South.

Map LU-4
Community Plan Areas and Neighborhoods



The Eastside Community Plan Area makes up the largest land area in Long Beach. The Plan area predominately consist of low-density, single-family homes built during the Post-World War II era. Major streets consist of the wide, tree-lined boulevards favored in construction of postwar suburban neighborhoods. Several large, auto-oriented shopping centers, schools and religious institutions serve Eastside residents. El Dorado Park is one of the largest regional parks in the area. This expansive 800-acre open space features a spacious community center, a 100-acre nature center, night-lighted basketball and volleyball courts, softball and soccer fields, a skate park, an outdoor archery range, group picnic sites, a disc golf course, a tennis center, an 18-hole golf course, playgrounds, three fishing lakes and a fishing pond.

El Dorado Park West home.

Linden Avenue Historic District.

Central

The Central Community Plan Area consists of two neighborhoods: Central Area West and Central Area East. This area is one of many historic areas in Long Beach. The area was once traversed by a former Pacific Electric Railway line. Although the line—long since abandoned—has been developed with residential and commercial buildings, remnants of its right-of-way are still visible, as portions have been occupied with open space features, including a community garden, Orizaba Park and Rotary Centennial Park. The area includes a mixture of residential uses at varying densities, from single-family homes to apartment complexes. Older residences are scattered throughout the neighborhoods. The Minerva Park Place Historic District, located near the intersection of Gaviota Avenue and 11th Street, is a tiny street lined with sixteen Spanish Colonial Revival homes built as a single project in 1925. The district's charm and small scale are reminiscent of courtyard housing. Along Anaheim Street is Cambodia Town, a roughly one-mile long business corridor with numerous Cambodian restaurants, retail stores, religious institutions and Cambodian-American service centers. The Central area is one of the most ethnically and physically diverse areas of Long Beach.

Traffic Circle

The Traffic Circle Community Plan Area consists of the Traffic Circle, Stearns Park, Alamitos Ridge and Bryant School neighborhoods. The Traffic Circle, located at the intersection of Pacific Coast Highway and Lakewood Boulevard, is a large roundabout with multiple lanes. It was originally constructed in the 1930s and modeled on European traffic circles. It is surrounded by auto-oriented commercial and higher-density residential uses. Farther south are older residential neighborhoods constructed in the 1920s and 1930s, while north of the Traffic Circle are suburban style neighborhoods constructed in the 1940s and 1950s.

Downtown

The Downtown Community Plan Area consists of Washington School, Willmore City, West End, East Village, Promenade, North Pine and the Downtown Shoreline neighborhoods.

Downtown Long Beach is a vibrant City center with an assortment of commercial, financial, institutional, office, civic and government, residential, entertainment, retail, maritime and waterfront uses. Downtown is the location for most of the City's major tourist attractions and municipal services. The Shoreline district south of Ocean Boulevard includes many of these attractions, including The Pike, the convention center, sports arena, marina and Shoreline Village. Downtown commercial and restaurant activities are concentrated along Pine Avenue and Shoreline Drive, while most of the municipal and governmental buildings and services are along West Ocean Boulevard and Broadway. Tall residential towers are found along Ocean Boulevard. The Aquarium of the Pacific is located on Rainbow Harbor and attracts approximately 1.5 million visitors each year. Numerous events are held at downtown venues every year, including the Queen Mary Scottish Festival, Long Beach Grand Prix, Long Beach Lesbian & Gay Pride Parade & Festival and the Bob Marley Reggae Festival.

Midshore

Community Plan Area neighborhoods include: Alamitos Beach, Rose Park, Franklin School, Bluff Heights and Bluff Park. Midshore primarily consists of historic districts, including Rose Park, Rose Park South, Carroll Park, Bluff Heights, Bluff Park and Hellman Street Craftsman Place. Primarily a residential area, Midshore contains numerous bungalows built in the 1920s. However, many older single-family homes have been replaced with larger apartment buildings built between the 1960s and the 1980s. Ocean Boulevard is lined with high-rise apartment and condominium buildings and stately residential homes with views of Bluff Park, the Pacific Ocean and Catalina Island.

Southeast

Southeast Community Plan Area consists of Alamitos Heights, Belmont Heights, Belmont Shore, Belmont Park, Naples, Peninsula, Recreation Park, University Park Estates and the Southeast Area Specific Plan (SEASP) neighborhoods. Belmont Shore is a commercial and residential neighborhood with thriving retail stores, restaurants, commercial services, entertainment uses and small offices. Unique to this Community Plan Area is the Naples neighborhood, built in the early 1900s, with three artificial islands connected by high-arching bridges meant to replicate Venice, Italy. Some of the homes on the islands have direct access to private boat docks along the canals that encircle the islands. A public square with a fountain is sited at the center of this neighborhood. Along 7th Street and Pacific Coast Highway is Recreation Park, one of the oldest City parks in Long Beach. Established in the 1920s, Recreation Park offers numerous recreational amenities, including 18- and 9-hole golf courses, the Billie Jean King Tennis Center, casting club, the band shell, the Long Beach Lawn Bowling Club, a dog park, and Joe Rodgers and Blair baseball fields.

The SEASP area includes several large, auto-oriented shopping centers located along Pacific Coast Highway, as well as Los Cerritos Wetlands, Alamitos Bay Marina and Alamitos Bay Landing.

4th Street "Retro Row" in the Midshore Community Plan Area.

Belmont Shore in the Southeast Community Plan Area.

Gelson's Market in the SEASP portion of the Southeast Community Plan Area.

LONG BEACH ECONOMY

Long Beach is home to over 15,000 businesses and over 165,000 employees, establishing the City as a key business location in Southern California.[16] Top private employment industry sectors include transportation and warehousing, manufacturing, health care, information, professional, scientific, and education.[17] As Figure LU-2 illustrates, education and health are the largest employment industries in Long Beach.

During the last decade of the 20th century and the first ten years of this century, Long Beach's economy experienced significant transition, from robust aerospace and manufacturing industries to a new knowledge-based economy. Not only is Long Beach's economy transitioning, but it is also recovering from the 2007-2009 Great Recession, the worst recession since the Great Depression. The recovery, although slow, is showing gradual increases in employment rates, household income, building permits and housing values. In response to the recession and high unemployment rates, the City has placed special focus on the creation of jobs in this Land Use Element.

Top Industry Sectors

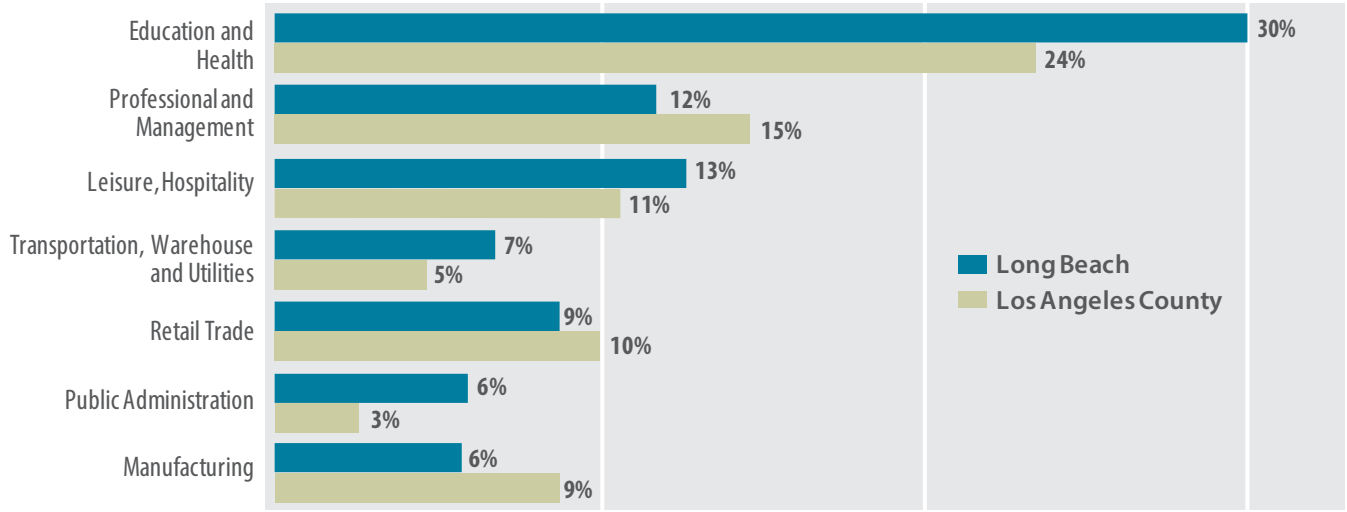
Transportation and Warehousing

The transportation and warehousing industry has experienced a significant decline in the coastal region since the late 1990s. Despite the growth of the ports of Long Beach and Los Angeles, increasing rents in coastal areas have driven most employment in the transportation and warehousing sector to the low-cost but easily accessible Inland Empire. However, the local passenger transport and air transportation sectors continue to grow. The ports of Long Beach and Los Angeles will continue to generate positions for high-skilled logistics professionals such as those graduating from the Global Logistics programs at CSULB. The economic impact of the ports on the City of Long Beach is largely the result of activities involving cargo handling, including trucking and warehousing. Nearly 30,000 jobs in the City are supported—directly and indirectly—by the ports.

Manufacturing

Long Beach was once a major contributor to the robust aerospace manufacturing industry that dominated Southern California in the mid-to-late 20th century. With World War II, the Douglas Aircraft Company plant made Long Beach an important center for the U.S. aerospace industry and helped dominate the local economy. At peak wartime production, Douglas had 160,000 employees and produced more than 300 aircraft monthly. After merging with McDonnell & Associates, McDonnell Douglas built the 717 jetliner and the MD-80 commercial jet. In the early 1990s, the Long Beach aerospace industry employed over 36,000 workers. In 2015, Boeing (formerly McDonnell Douglas) closed the C-17 Globemaster III production plant that manufactured a massive four-engine jet that can haul 60-ton tanks, troops and medical gear across great distances.

Figure LU-2: Percent of Employees by Industry in 2015 (Long Beach and Los Angeles County)



Source: California Employment Development Department, 2007-2015; InfoGroup; and SCAG, 2017.

TABC, Inc. (Toyota) automobile parts manufacturing.

As of 2012, manufacturing jobs in Long Beach represented nearly six percent of the total employment base. Manufacturing subsectors in Long Beach include pharmaceuticals, miscellaneous manufacturing, industrial inorganic chemicals, structural clay products, plywood and miscellaneous manufacturing.

Health Care

Access to quality health care institutions is a key quality-of-life indicator and necessary in continuing to attract a creative and talented workforce. The City continues to be a regional center for health care services. Four of the top ten largest employers in Long Beach are medical facilities, as shown in Table LU-2. While employment in the health care industry has increased by almost nine percent regionally, it has declined in Long Beach, with job losses dating to the mid-1990s largely due to the closure of the U.S. Naval Hospital in 1994 and possibly to increased reductions in elective surgeries.

Information

The information sector (e.g., book and software publishing, motion picture and sound recording, broadcasting, telecommunications, information services and data processing industries) has experienced local gains in employment in Long Beach, and has become increasingly concentrated in the City when compared to the region. While this sector comprises only a small percentage of total local employment, certain subsectors, such as motion picture production and distribution, publishing and cable television services, show promising signs as contributors to future local economic strength.

Professional, Scientific and Technical Services

The Professional, Scientific and Technical Services employment sector is one of the best-performing in Long Beach. This sector has experienced steady gains and also provides well-paying jobs. Much of the employment in this sector is located in downtown Long Beach, including engineering and architectural services, accounting, auditing and bookkeeping, general services, and research and testing services.

Education

The education sector is important because it employs a well-educated workforce that is vital to long-term economic development potential. Employment associated with basic educational facilities—elementary and secondary schools, libraries and educational services—has experienced more gains since 2000 than in the regional economy as a whole. Employment associated with colleges, universities and vocational schools trains residents to work in jobs with good pay and opportunity for advancement. As shown in Table LU-2, Long Beach Unified School District is the City's largest employer with over 12,000 employees in 2016.

Workforce Characteristics

Long Beach has a fairly large labor pool, with over 245,200 residents either employed or seeking work in 2014. Approximately 28 percent of the population over the age of 25 had attained a Bachelor's degree or higher, compared to 29 percent in the County in 2014. The median

Table LU-2: Long Beach's Largest Employers (2016)

Rank	Employer	Employees
1	Long Beach Unified School District (LBUSD)	12,213
2	Long Beach Memorial Medical Center	5,138
3	City of Long Beach	5,122
4	California State University, Long Beach (CSULB)	3,057
5	Veterans Affairs Medical Center	2,950
6	Long Beach City College	2,695
7	The Boeing Company	2,039
8	CSULB Research Foundation	1,677
9	Molina Healthcare Inc.	1,488
10	St. Mary Medical Center	1,480

Source: City of Long Beach Comprehensive Annual Financial Report, Fiscal Year Ended September 30, 2016

income of $52,944 was five percent lower than the County median income in 2014. Most Long Beach residents—67 percent of the workforce—are employed in retail trade, manufacturing, education, health, leisure and hospitality, the professional and management. Nearly 24 percent of residents commute within Long Beach, while 76 percent commute to workplaces in other cities for work.[18]

As the economy recovers from the deep national recession ending in 2009, Long Beach unfortunately continues to post higher unemployment rates than surrounding cities, Los Angeles County, California and the U.S. However, since 2010, the unemployment rate has continually declined from a high of 14.6 percent in November 2010 to 7.9 percent in April 2015.[19] This Land Use Element recognizes that business expansion and job growth are critical to improving the local economy.

Fiscal Sustainability

Long-term sustainability of revenue sources is important because they support crucial city-based services such as road repair, infrastructure maintenance, parks, libraries, fire protection and public safety. Reduction in revenue streams for these services attributable to the recent recession and loss of redevelopment funds resulted in cuts to these services at varying levels. This Land Use Element is designed to help restore and enhance City resources for these services.

General Fund Revenue

A large portion of the General Fund is attained from sales tax and property tax revenues. For fiscal year 2015, these sources represented 37 percent of General Fund revenues.

Land use planning decisions are closely tied to municipal revenue sources, as different development types generate different sales tax and property tax revenue. By undertaking particular land use planning strategies, the City can work toward a more solid financial footing over the long term.

Loss of Redevelopment

The former Long Beach Redevelopment Agency was charged with revitalizing the City's neighborhoods and improving blighted areas, with responsibilities related to promoting economic development, creating jobs and providing affordable housing. On February 1, 2012, pursuant to State legislation AB x1 26, the Agency and all other redevelopment agencies in California, was dissolved. The loss of redevelopment affected the City drastically, with City leaders having to make difficult decisions about layoffs, service reduction or elimination, staffing transfers and canceling or delaying major projects, including affordable housing developments.

Although the City continues to grapple with how to make up the difference in lost revenue, other tools are available to assist with improving neighborhoods and promoting economic growth. This Land Use Element encourages new infill development, expanded development opportunities along corridors and higher residential density around transit stations. These pursuits will continue the endeavors of removing blight and focusing on urban revitalization, but will rely on private investment to spur new development projects. The City has also been successful in procuring planning grants that are funding regulatory planning projects aimed at specific areas. The City will continue to pursue other available tools, including bonus densities and streamlined processing, as well as persuading the State to provide assistance for needed neighborhood programs.

SUSTAINABILITY AND THE NATURAL ENVIRONMENT

Natural Environment in Long Beach

The remaining natural environment in Long Beach can be credited to both City and local community conservation efforts. Efforts are currently underway to restore, preserve and create additional areas of green and open spaces, particularly where there are rare wetland habitats and/or in neighborhoods where there is a lack of open space.

Local Nature Areas and Wetlands

Given the City's location along the Pacific coast and at the mouth of two significant southland rivers, our natural environments and associated open spaces provide places for thriving, beneficial ecosystems within the urban environment. Long Beach has numerous wetland environments, nature reserve areas and parks, including:

» **The Los Cerritos Wetlands.** Located near the mouth of the San Gabriel River at the Pacific Ocean, these wetlands span Los Angeles and Orange counties between the cities of Long Beach and Seal Beach. Consisting of functioning marshes, seasonal brackish ponds and degraded habitat areas, the wetlands are home to a variety of coastal wildlife. Long Beach, along with surrounding cities, the California Coastal Conservancy, the Rivers and Mountains Conservancy, several local businesses and community groups are working to protect, purchase and restore the remaining acreage of these precious remaining Southern California wetlands.

» **El Dorado Nature Center.** This 100-acre nature park includes a visitor center, museum, interpretive programs and several miles of trails. The natural components of the park include several small lakes and creeks and a wide assortment of California native plant communities, including oak woodland, riparian, chaparral, coastal sage scrub and native grasslands.

» **Golden Shore Marine Biological Reserve Park.** Located south of Ocean Boulevard at the mouth of the Los Angeles River, this marsh was created as a mitigation project for the Aquarium of the Pacific, which was built on previous salt marsh habitat. The marsh area and wetland habitat provide excellent forage for waterfowl and other marine wildlife and offer educational value to residents and visitors.

» **Jack Dunster Marine Biological Reserve.** This reserve was constructed on the northwest side of the Los Cerritos Channel adjacent to the Rowing Center at Marine Stadium. It is a natural habitat created for public recreational and educational opportunities.

El Dorado Nature Center's natural environment is a sanctuary for animals and plant life.

Watersheds Lead to Long Beach

The watersheds of the San Gabriel and Los Angeles Rivers cover over 1,500 square miles, from the San Gabriel Mountains to the Pacific Ocean at Long Beach, see Map LU-5 (Los Angeles and San Gabriel Rivers Watersheds). The two rivers arise from springs and creeks in the mountains surrounding the Los Angeles basin, travel across the San Gabriel and San Fernando Valleys and then flow nearly parallel across the coastal plain to the ocean. The watershed area also contributes to the local groundwater basins on which Long Beach relies for its water supply.[20]

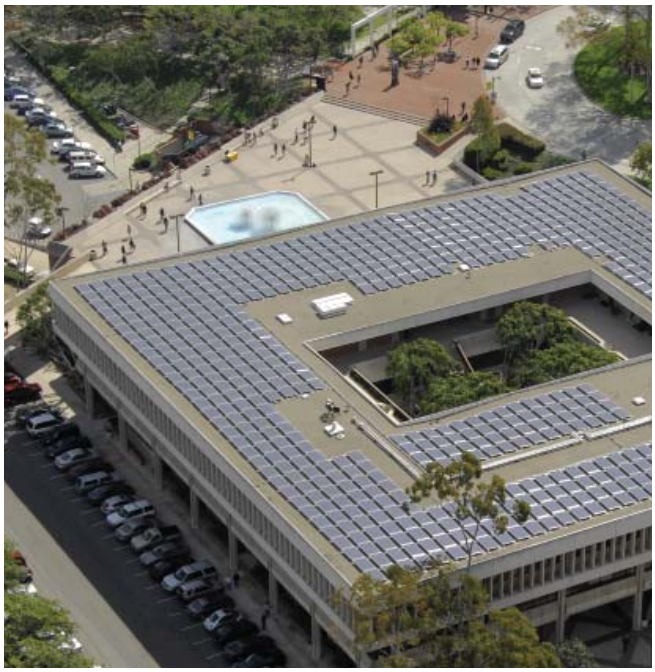
Urbanization has had a considerable impact on natural resources, altering the hydrology in the watersheds and significantly reducing the extent of natural habitat and biotic communities. Until the 1930s, both the San Gabriel and Los Angeles Rivers and their tributaries were primarily natural bottom streams. Now, over 75 percent of the streams are concrete-lined channels, modified for flood protection purposes. The restructuring of the rivers has resulted in a dramatic increase in urban runoff, the main source of water pollution along Long Beach's coast. Unlike the soil and vegetation in natural watersheds, most urban areas are covered in impermeable surfaces such as asphalt or concrete. As a result, instead of rainwater slowly percolating through the ground and getting filtered and cleaned along the way, unfiltered water runs along streets, into storm drains and then into rivers. As the rivers accumulate a large share of the Los Angeles basin's debris and pollutants, they ultimately empty into the ocean, affecting the water quality of the City's coastal neighborhoods, marinas and beaches.

Map LU-5
Los Angeles and San Gabriel Rivers Watersheds

Environmental Sustainability

Environmental sustainability entails understanding the limitation of our finite resources (e.g., water, fossil fuel, natural gas) and adopting practices that limit or eliminate waste and pollution. The environmental movement grew in response to several environmental catastrophes in the 1960s, which heightened public consciousness and led to many environmentally-focused national policy directives such as the Clean Air Act. Broader-based initiatives of the twenty-first century have taken greater hold. Concerns related to climate change, rising fuel prices, and the quality of natural habitats have resulted in increased public and private efforts to promote better environmental stewardship. Public efforts include policy and regulatory changes aimed at protecting natural areas, promoting clean air and water, increasing transit use and limiting waste and pollution. Long Beach's recent efforts in environmental sustainability include adopting and implementing the following programs and ordinances:

Parking lot bioswales help filter out pollutants.



Solar panels on Brotman Hall at CSULB.

- Conservation & Water Supply Shortage Plan.
- Lawn to Garden Incentive Program.
- Low Impact Development (LID) for storm water management.
- Model Water Efficient Landscape Ordinance.
- Building Standards Code amendments for energy efficiency.
- Construction and Demolition Debris Recycling.

Sustainable City Action Plan

The City has promoted sustainability by establishing the Office of Sustainability and a Sustainable City Commission to implement the City's Sustainable City Action Plan, adopted in 2010. The Plan includes measurable goals and actions, many of which relate to land use planning:

- **Buildings and Neighborhoods.** Initiatives emphasize alternative modes of transportation, including walking and bicycling, in an effort to reduce vehicle use and vehicle emissions. Initiatives also focus on green (sustainable) building design approaches that minimize a building's negative impacts on the environment and on building occupants.

- **Energy.** Initiatives seek to increase use of sustainable sources of energy. The City and community must work together by investing in both renewable energy sources and energy efficiency.

- **Transportation.** Initiatives focus on improved transit options, expanded bicycle infrastructure, opportunities for less car-dependent lifestyles and reduced port-related air emissions.

- **Urban Nature.** Initiatives aim to enhance urban nature, integrate park and wildlife areas, and encourage sustainable uses of open space, with the overarching goal of increased appreciation of, and respect for, nature.

Climate Change and Sea Level Rise

Climate change is a global concern that directly affects local communities. Worldwide, 2014 was the warmest year on record and 2005 to 2014 was the warmest decade on record since thermometer-based observations began. Global average surface temperature has risen at an average rate of 0.15°F per decade since 1901.[21] According to the Intergovernmental Panel on Climate Change established by the United Nations Environment Programme and the World Meteorological Organization, over the next 100 years, temperatures are projected to increase another two to ten degrees.[22] Greenhouse gases (GHGs) are the gases present in the Earth's atmosphere that reduce the loss of heat into space. GHGs primarily include water vapor, carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O). GHGs affect climate by concentrating in the Earth's atmosphere and trapping heat by blocking some of the long-wave energy normally radiated back beyond the atmosphere. While some GHGs occur naturally, widespread agreement among climate scientists worldwide promotes the view that human activity is increasing the GHGs in the Earth's atmosphere and accelerating global warming. Activities causing this warming include the burning of fossil fuels for industrial operations, transportation, heating and electricity.

Sea Level Rise

As global temperatures continue to rise, the distinct potential exists for a rise in sea level, which would dramatically affect the coastal areas of Long Beach. The Pacific Institute has conducted sea level rise scenarios along the California Coast to determine which areas would be impacted by a 1.5 meter (4.6 feet) rise in sea level.[23] Rising seas could threaten to inundate low-lying coastal and marina areas, erode beaches and shorelines, affect the POLB operation areas, damage property within Belmont Shore, Naples and the Peninsula and affect ecosystems such as wetlands.

Resilient City

Long Beach is rising to the challenge of preparing and responding to future types of disaster, whether natural or human-made. The City has worked with experts and is developing plans to create a more resilient city in a changing and increasingly globalized world, particularly in the face of imminent sea level rise, tsunamis, potential Port of Long Beach terrorism attack, water shortages and seismic challenges.

Sea level rise could potentially affect neighborhoods on the water, including Naples and Peninsula.

HEALTHY COMMUNITIES

Land use decisions affect the shape and feel of a community and the health of those who live there. From the supply of affordable, high-quality housing and the types of housing available, to reliable public transportation and the presence of grocery stores that sell healthy food, decisions about land use in Long Beach have impacts on how people live.

One of the most critical issues confronting Long Beach neighborhoods today is the impact that the physical environment has on public health. Research studies have consistently shown that the design of the physical environment can contribute to chronic diseases such as obesity, type 2 diabetes, asthma and heart-related disease. According to a study published in the Journal of American Medical Association in 2010, more than one third of children and adolescents in the U.S. were overweight or obese, putting them at higher risk for serious, even life-threatening health problems.[23] Community design often presents barriers to physical activity, contributing to increased risk for obesity, heart disease, diabetes and other chronic diseases. Barriers include, but are not limited to, the absence of parks, limited transportation options, separation of uses and nonpedestrian-friendly streets.

Healthy Communities Policy

Approved by the Long Beach City Council in 2014, the Healthy Communities Policy establishes a framework for developing Long Beach's neighborhoods into a healthy, prosperous and livable community. The document covers:

- Land use.
- Mobility.
- Environmental quality.
- Raising the profile of public health.
- Physical health and wellness promotion.
- Healthy food access.
- Health equity.
- Community safety.

Active Living

Designing healthy communities that facilitate an active lifestyle is critical to the long-term health of our neighborhoods. People are more likely to be physically active if they can incorporate activity into their daily routine. Long Beach has been at the forefront in creating an active living environment for residents, including creating an environment that is both bicycle and walkable friendly. Long Beach was recently named the third most bicycle-friendly City in the United States by the Alliance for Biking and Walking and awarded Silver Status as a bike friendly city by the League of American Bicyclists. Additionally, the Department of Parks, Recreation and Marine Community Recreation Services Bureau offers an assortment of recreational programs, classes and sports leagues that promote active living. In 2003, the Department of Health and Human Services initiated the Healthy Active Long Beach to address chronic diseases by implementing programs that focus on healthy eating options and physical activities. The City of Long Beach continues to promote active living programs and improve the built environment in ways that are more conducive to physical activity.

Healthy communities provide opportunities to stay active - young adults during a workout program at Heartwell Park.

Access to Healthy Foods

Increasing access to healthy, locally-grown foods by invigorating the community's interest in farmers' markets, community and school gardens, and home-grown foods also contributes to a healthier population.

» **Community Gardens and Urban Farms.** Community gardens and urban farms can be established on public or private land that is gardened and tended by the community. Community gardens and urban farms can be used by the community to grow vegetables for personal use, or may be dedicated for "urban agriculture" where the items grown are sold at a farmers' market. Community gardens have many benefits, including reducing food budgets for families, educating residents about sustainable agriculture and real food, providing healthy food options, raising environmental awareness, and providing an additional form of passive open space for the community. The Long Beach Community Garden Association operates and maintains an eight-acre community garden at El Dorado Park and rents out over 300 garden plots. Long Beach Organic, a non-profit organization, operates over half a dozen small urban garden spaces throughout the City. As of 2015, Long Beach had over a dozen community gardens located throughout the City, with more in the planning stages.

» **Urban Agriculture.** There is a growing movement in Long Beach that promotes healthy and environmentally sustainable urban agriculture and small-scale farming. Several non-profit organizations and local businesses are supporting a local agriculture movement and small-scale animal husbandry in the City. The goal is to build an urban farming network that will increase local food production, assist underserved neighborhoods and establish greater community and social connections. In 2009, the City's Office of Sustainability established the Civic Center Edible Garden, a small demonstration garden aimed at educating the community about growing their own food. There are also several small-scale urban farms operating in the City, supplying local farmers' markets and restaurants with organic fruits and vegetables.

» **Farmers' Markets.** Farmers markets provide a physical place for farmers and food artisans to directly sell their food to the public. These markets can be permanent or temporary, and can take place in private buildings or public spaces. Farmers' markets provide support for area farmers and businesses and provide an opportunity for the community to purchase fresh, locally grown foods. Established farmers' markets occur regularly in downtown, Bixby Knolls, the Alamitos Bay Marina and near the Long Beach Airport. Additional neighborhoods should be served by farmers' markets.

» **School Gardens.** School gardens, like community gardens, allow children to experience a working garden and function as outdoor classrooms. Not only do they provide healthy produce for children to eat, but they offer an educational experience about healthy eating and how to grow fruits and vegetables. Parents, teachers and principals are teaming with non-profit groups and local businesses to pursue grants to establish instructional and school gardens. Several schools in the Long Beach Unified School District are participating in, and enjoying the benefits of school gardens.

Grace Community Gardens in the Addams Neighborhood in North Long Beach.

Environmental Justice

Evidence demonstrates that environmental hazards and air pollution disproportionately affect low-income and minority populations. Environmental justice refers to the fair treatment and meaningful involvement of all people regardless of race, color, religion, origin, income or sexual orientation with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

Several Westside Long Beach neighborhoods are proximate to the Port of Long Beach (POLB) and the Port of Los Angeles (POLA), as well as major transportation routes and rail yards that handle the majority of port-related truck and train traffic. The ports happen to be the largest single-source polluter in Southern California. Affected neighborhoods are subject to the environmental and air pollution impacts from ship, port, rail and truck operations. A California Environmental Protection Agency Air Board report[26] indicated that emissions from cargo handling equipment and engine emissions from ships idling at the ports are the primary contributors to the high potential cancer risk levels as well as other serious health issues near the ports.

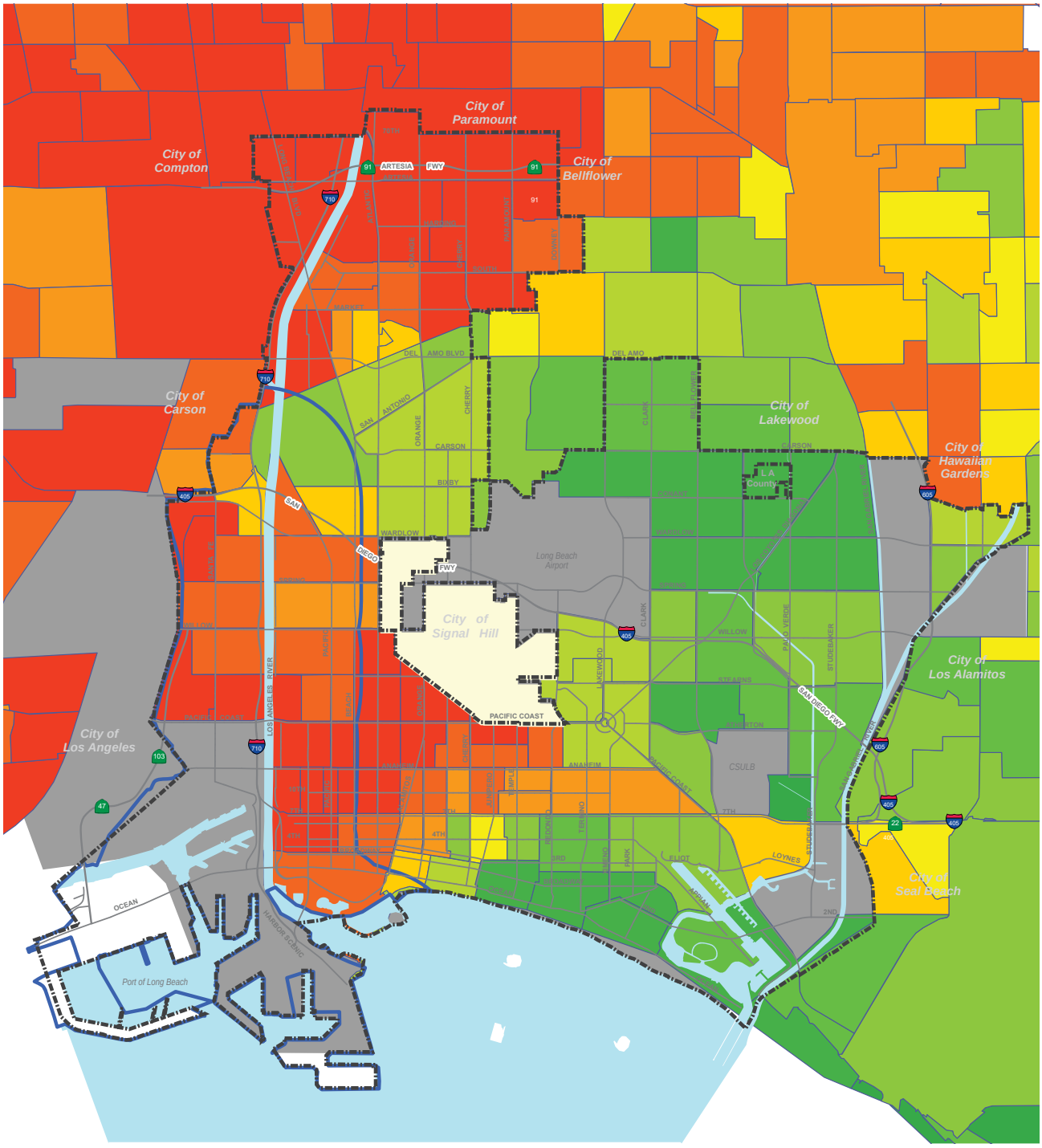
The POLB has implemented numerous programs and strategies aimed at improving air quality in the port vicinity. A joint accomplishment with the Port of Los Angeles is the San Pedro Bay Clean Air Action Plan, a comprehensive plan aimed at significantly reducing the health risks posed by air pollution from port-related ships, trains, trucks, terminal equipment and harbor craft. The POLB also instituted the Clean Trucks Program, which works to modernize the port trucking industry and slashing truck-related air pollution significantly. California law effective in 2013 requires idling cargo ships to stop their engines and plug into electric power at the docks while loading and unloading cargo.

The POLB also administers grant programs designed to improve local neighborhoods by lessening the impacts of Port-related air pollution. There are programs that specifically address air pollution risks to vulnerable groups such as children and seniors. Examples of projects that are eligible for grants include air-filtration systems at schools and daycare centers and educational health-outreach programs for families and seniors.

In addition, the City has committed to addressing disparities in impacts and resources by prioritizing investments in underserved communities. The West Long Beach Livability Implementation Plan and the Communities of Excellence (CX3) Physical Activity and Obesity Prevention Plan both guide future improvements in parks and open space, active transportation infrastructure and social and environmental programming to address health disparities.

The ports of Long Beach and Los Angeles, together are the largest single-source of air pollution in Southern California.

Map LU-6
Impacted Communities



Legend

CalEnviroScreen 3.0 Scores by Census Tract (Deciles)

- 91 - 100 % (Highest Score)
- 81 - 90%
- 71 - 80%
- 61 - 70%
- 51 - 60%
- 41 - 50%
- 31 - 40%
- 21 - 30%
- 11 - 20%
- 0 - 10% (Lowest Score)
- High pollution, low population
- Port Impact Zone 1a

SMART CITY

Facets of a Smart City

A "smart" city is one that uses information and communication technologies to be more intelligent and efficient in the use of resources. Smart cities are tying together technology innovation, sustainability and energy reduction strategies aimed at reducing municipal costs, minimizing energy use, improving service delivery and reducing impacts to the environment. Through these means, smart cities are achieving greater efficiencies in many facets of the urban environment: people, building and facilities, and government.

Smart Transportation

Smart transportation is a major component of Smart City. The Mobility Element covers smart transportation features including driverless technology, real-time traffic and parking data, zero emission technology and intelligent transportation systems (ITS).

Smart People

Smart cities include smart schools and libraries, which help create smarter people. One of the greatest challenges facing cities and school districts is making education technologies more efficient. The Long Beach Unified School District developed a Technology Master Plan that provides a long-term roadmap for the use of technology. New schools, such as Jessie Elwin Nelson Academy, have opened with new state-of-the-art technologies, including wireless network systems and the use of tablets, allowing teachers and students to engage in new methods of teaching and learning. In addition, all of Long Beach's public libraries offer free Wi-Fi, and library card holders can check out and download digital media free of charge.

Smart Buildings and Facilities

Smart living focuses on the technological advances at home that can provide residents with the comforts of modern conveniences. Homes can include new technologies to remotely control lighting, security, energy usage and landscaping irrigation. Southern California Edison has implemented smart meters, which enable customers to review hourly, daily and weekly electricity usage. Through the use of online tools, customers can better understand how much electricity is being consumed, and they can better manage their energy usage based on real-time feedback.

Other smart living technologies for the home include solar power products, smart thermostats, light occupancy sensors, smart phone home automation, home energy manager, hybrid/electric vehicle plug-in charging stations and smart-grid-ready appliances.

These technological systems aimed at making a building anticipate energy and water needs and efficiencies can make a huge difference in consumption, conservation of resources and homeowner finances.

Smart Government

Long Beach has been active in implementing technological innovations to improve operational efficiencies and reduce municipal costs. The City created a Technology and Innovation Commission aimed at advising and making recommendations to the City Council on matters pertaining to technology and innovation. The City's newly renamed Technology and Innovation Department has completed a number of major initiatives to modernize its information and communications systems, such as implementing a new utility customer information system, Wi-Fi in parks deployment, fiber optic network expansion, and developed a series of smart device apps.

The City has launched custom websites to improve communications with the community. The City also launched a new online service making it easier for residents to submit code enforcement complaints via website and to obtain various permits online.

Long Beach also intends to attract and expand local businesses, and become more business friendly. For example, the City can expedite the permitting process by using new technologies and web-based applications. They can also provide technical assistance to small and start-up businesses.

ADDRESSING OUR CHALLENGES

Challenges That Could Affect Long-Term Growth

Long Beach must not only face the challenges growth brings, but also the challenges existing with any city of its age and size. Existing challenges include aging infrastructure, recreational open space distribution inequities, incompatible developments, public health issues and distressed commercial corridors.

Land Use Incompatibilities

In some Long Beach locations, there are awkward transitions between residential neighborhoods, commercial corridors and industrial areas, creating friction between uses. These conditions can create adverse impacts, including parking intrusions, cut-through traffic, unsightly views, noise, emissions, glare, vibration and odors. Where these incompatibilities occur, the public health of residents may be compromised and economic development opportunities diminished.

Fragile Neighborhoods

During the 1980s, inferior zoning regulations and short-sighted political decisions allowed so called "cracker box" apartment buildings to pervade stable single-family neighborhoods. Distinctive bungalows in the City were razed. These apartment buildings lacked architectural character, were built inexpensively, were incompatible with the scale of the neighborhood and lacked appropriate parking spaces, private open space and landscaping. Absentee ownership discouraged property reinvestment resulting in building deterioration and lower rental rates. Without transit-oriented infrastructure available to support reduced parking requirements, inadequate on-site parking spaces resulted in an increased demand for on-street parking and contributed to parking shortages. Overcrowding conditions and higher crime rates created social issues and substandard living conditions. Examples of these apartments can be found primarily in the central area of Long Beach.

Stressed and Lengthy Corridors

The City's commercial corridors generate most of the City's sales tax revenue but do not necessarily provide for the full range of neighborhood services to further healthy community goals. Many corridors lack identity and do not integrate with adjoining neighborhoods. Issues include aging vacant or abandoned buildings, lack of private investments, high business turnover, distressed properties, lack of uniformity, deficiencies in pedestrian amenities and incompatible uses. Examples of these corridors include segments of Long Beach Boulevard, Pacific Avenue, Atlantic Avenue, Pacific Coast Highway, Artesia Boulevard, and Anaheim Street.

Public Health Concerns

There is a growing awareness of how the design of the physical environment affects public health. Within some neighborhoods there is little or no access to healthy and affordable food options due to a limited number of grocery stores, quality restaurants, community gardens and farmers' markets. Some areas are overly concentrated with fast food restaurants, convenience and liquor stores. The design of the physical environment discourages everyday physical activity. Inefficient street patterns and land uses discourage walking and a lack of bicycle trails, safe play grounds and insufficient recreation areas supports inactivity, especially among children. Residential neighborhoods proximate to ports, truck routes, freeways, major arterials and airport flight paths bear noise and air pollution impacts. All these issues increase the potential risks of obesity, cardiovascular disease, diabetes and asthma. We now realize that the design of the built environment holds the potential for addressing many of Long Beach's current public health concerns.

Vehicles and trucks traveling along the I-710 freeway creating noise and emission impacts to neighboring uses.

Port Related Facilities Expansion Projects

Containerized shipping through U.S. West Coast ports has increased significantly, largely due to the enormous increase in the U.S. trade with Pacific Rim nations. To support the continued increase in container cargo at the POLA and the POLB, two major projects are proposed: the Intermodal Container Transfer Facility (ICTF) Modernization Project and the Southern California International Gateway (SCIG). The SCIG involves constructing and operating an intermodal rail yard that would transfer containerized cargo between trucks and railcars. The project is located in the city of Los Angeles along the Dominguez Channel, between Sepulveda Boulevard/Willow Street and Pacific Coast Highway, adjacent to the City of Long Beach. The ICTF Modernization Project would increase the transferring of containerized cargo from the terminals of the POLA and POLB on to trains. The project is located in the city of Los Angeles adjacent to the City of Long Beach, between Sepulveda Boulevard/Willow Street and East 223rd Street/I-405 freeway. Both projects, when completed, will increase rail and truck activity around the ports, and could potentially adversely impact surrounding Long Beach neighborhoods. Proposed mitigation measures as part of these projects are aimed as lessening these impacts.

Aging and Deficient Infrastructure

Long Beach is over 125 years old. The City's aging infrastructure built over its lifetime to accommodate a growing population are in need of repair or replacement. Deficiencies have been identified in the City's transportation infrastructure consisting of streets, alleys and sidewalks. Deficiencies have also been identified in City facilities, including fire, police, parks and recreation, library and health facilities. If infrastructure conditions are left unmet, it can lead to an increase in safety concerns, reduced service levels, accelerated depreciation of assets, increased community dissatisfaction and property damage claims.

Inequities to Community Services and Open Space

Parks and open spaces in Long Beach are concentrated in a few areas of the City, leaving many neighborhoods underserved. Access to local open spaces is beneficial to physical and emotional health. The population in Long Beach's central, western and northern neighborhoods are considerably denser than other portions of the City, but those neighborhoods have notably few parks, recreational amenities and natural habitat areas for their residents. Long Beach's Open Space and Recreation Element has established a target of eight acres of parks space per 1,000 residents, but as of 2002 it is only providing 5.6 acres. The element seeks to address the lack of parks in parts of the City where the need is greatest.

Changing Behavior: Moving Away from the Reliance on Automobiles

Although major investments have been committed to improvements in transit infrastructure and integrating bicycling and pedestrian facilities with the physical environment, automobile usage continues to be the prevalent mode of transportation in Long Beach. Changing people's behavior - switching from a car-oriented culture to one that relies on using transit and bicycles - may be a long-term goal that will slowly be accomplished over time. According to the U.S. Census Bureau, in 2010, over 83 percent of Long Beach residents drove their cars to work, with nearly seven percent commuting by transit and over one percent by bicycle. These numbers showed moderate improvements over the past ten years when compared to Census data in 2000. A recent study on the Downtown separated bike lanes on Broadway and Third Street indicates that bicycle ridership along this route had increased by 33 percent and automobile usage had decreased by 12 percent. There are positive trends that indicate automobile usage is slowly decreasing, and transit and bicycle usage increasing. However, as the City continues to grow, it will need to continue to pursue land use changes that complement transit, bicycle and pedestrian improvements, as well as investments in the transportation system to support greater transit and bicycle usage.

Keeping Up with Technology

New technology is rapidly changing and can be costly to implement, maintain, and/or upgrade. With new technological advancements coming out almost everyday, and residents and businesses constantly "plugged in," many government organizations are simply trying to keep up while figuring out the best solutions to use. The City of Long Beach is striving to stay on top of the information age by integrating City operations with technology to improve land use and infrastructure, communications, maintain labor and operation efficiencies, and move traffic effectively and efficiently.

Aging and Insufficient Housing Stock

With limited exceptions, the existing structures in Long Beach were largely built between 1900 and 1942 (North, Central and West Long Beach) and between 1943 and 1968 (East Long Beach). Some of these older properties are historic gems and will continue to be protected under the City's Cultural Heritage Ordinance. Many of these older structures, however, have regrettable designs, were built with inadequate or no parking, and have not been maintained up to today's habitability standards for healthy and comfortable living. This is an issue for both the availability and quality of the City's housing stock and for sustainability. Additionally, since the Land Use Element was last updated in 1989, the population has grown by 44,000 residents but only 8,530 housing units have been built in total, and accounting for housing replacement only 4,354 net new housing units have been added to the City's housing stock. This has contributed to the housing supply and affordability crisis experienced by residents across the City. Just over 12 percent of all Long Beach households (renters and owners) are experiencing overcrowding, and 47% of all households are housing cost burdened, meaning they spend more than 30 percent of their household income on housing costs.

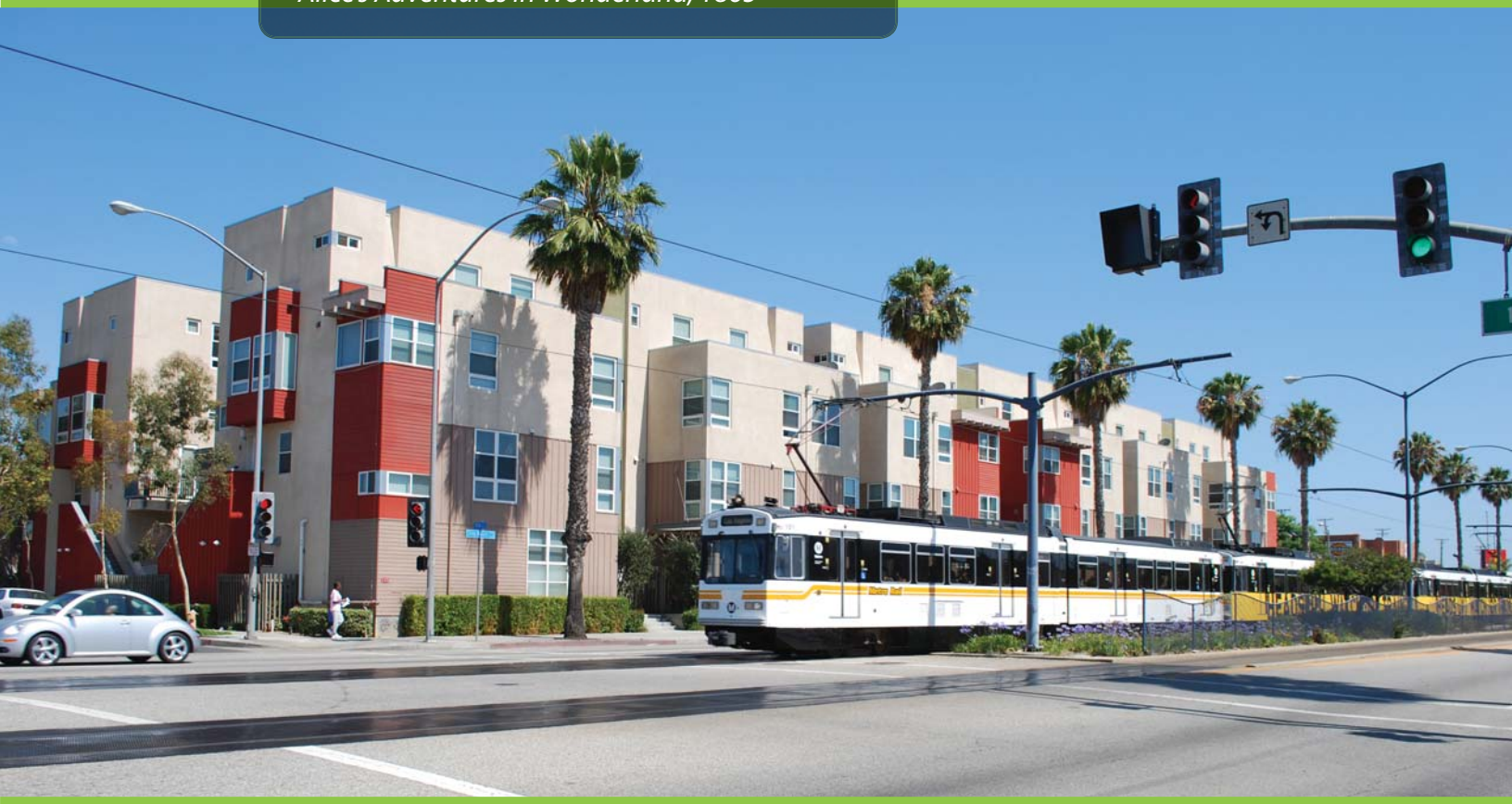
Land Use Plan

Creating Vibrant and Exciting Places

4

"Would you tell me which way I ought to go from here?" asked Alice. "That depends a good deal on where you want to get," said the Cat. "I really don't care where," replied Alice. "Then it doesn't much matter which way you go," said the Cat.

Lewis Carroll
Alice's Adventures in Wonderland, 1865



4

Land Use Plan

Creating Vibrant and Exciting Places

- Land Use Plan Overview 61
  - » Purpose 61
  - » Looking Forward 61
- PlaceTypes 62
  - » Defining and Measuring the Use of Land 62
  - » Long Beach PlaceTypes 64
  - » Open Space PlaceType 70
  - » Founding and Contemporary Neighborhood PlaceType 73
  - » Multi-Family Residential - Low and Moderate PlaceTypes 76
  - » Neighborhood-Serving Centers - Low and Moderate PlaceTypes 80
  - » Transit-Oriented Development - Low and Moderate PlaceTypes 82
  - » Community Commercial PlaceType 87
  - » Industrial PlaceType 90
  - » Neo-Industrial PlaceType 93
  - » Regional-Serving Facility PlaceType 96
  - » Downtown PlaceType 101
  - » Waterfront PlaceType 105
- Citywide Goals, Strategies, and Policies 110

LAND USE PLAN OVERVIEW

Purpose

The Land Use Plan includes regulating standards that define: the form and character of Long Beach's districts and neighborhoods, a broad mix of uses, and density and intensity levels tied to particular areas in the City. It also describes the distinct types of places that the City aims to create to achieve the community's vision for Long Beach. These places consider a range of components—land use, street design, building massing and building-to-street relationships—all of which are important in influencing how people experience environments. Specific design-related components that support desired character are covered in the Urban Design Element.

This chapter begins by defining basic land use terms and presenting Long Beach's "PlaceType" designations. PlaceType maps illustrate major physical planning concepts for Long Beach. At the heart of the Land Use Plan are goals, strategies and policies that help the City leverage its strengths and strategically consider development opportunities, while sustainably managing critical resources: neighborhoods, businesses, housing, transportation network, infrastructure systems, and the natural environment.

Looking Forward

The land use concept for Long Beach concentrates compact developments along corridors, infill sites and around transit stations, while protecting and enhancing established residential neighborhoods. It emphasizes creating green jobs and attracting new innovative businesses, while protecting the environment, offering new housing opportunities and creating "complete" healthy neighborhoods. By correlating land use and mobility decisions, the concept further enhances our transportation options—walking, biking, transit, vessel and vehicle—thereby effectively and efficiently moving people and goods. In addition, land use policies aim to restore Long Beach's natural resources, while increasing access to green and open spaces within all neighborhoods in the City.

The following overarching land use goals serve to guide and direct long-term planning in the City of Long Beach:

1. Implement Sustainable Planning and Development Practices.
2. Strengthen the City's Fiscal Health by Stimulating Continuous Economic Development and Job Growth.
3. Accommodate Strategic Growth and Change.
4. Support Neighborhood Preservation and Enhancement.
5. Diversify Housing Opportunities.
6. Ensure A Fair and Equitable Land Use Plan
7. Provide Reliable Public Facilities and Infrastructure to Encourage Investment.
8. Increase Access to, Amount of, and Distribution of Green and Open Space.
9. Preserve, Protect, Restore and Reconnect with Natural Resources.

These goals are discussed in greater detail on page 110.

The Land Use Plan: creating exciting and vibrant places.

PLACETYPES

This Land Use Element introduces "PlaceTypes," a new, more flexible and comprehensive approach to land use planning. The approach differs from traditional land use planning in that it de-emphasizes specific uses and focuses on the form and character of Long Beach's unique neighborhoods and districts. A number of PlaceType categories, or "districts," tailored to Long Beach define not only the permitted land uses for specific areas in the City, but also preferred development patterns, streetscapes and urban form features that make urban environments visually interesting and functional places for people.

PlaceTypes allow for a wide variety of compatible and complementary uses to create distinct and "complete" residential neighborhoods, employment centers, open spaces and other areas. By providing greater flexibility in development types and mixed uses, PlaceTypes can also contribute to a livelier urban environment and allow for long-established integrated districts like the downtown to evolve and improve. Through the use of this Land Use Plan's PlaceTypes, the City aims to achieve Long Beach's vision for a healthy, equitable and sustainable city

Defining and Measuring the Use of Land

Land Use and Urban Form

"Land use" is a term that describes different types of activities that occur in a particular area. For example, different areas of Long Beach contain homes, shops, industries, parks, and schools. In some places, such as downtown, a mixture of uses can create a well-rounded active place for living, dining, shopping, working and enjoying entertainment.

"Urban form" refers to the physical environment that influences how people experience an area. Urban form can include street design, transportation systems, the size and shape (or "massing") of buildings, and accessibility components. Policies that shape urban form are critical to creating vibrant human-scale places and enjoyable pedestrian experiences.

Mix of Uses

One of the innovative aspects of Long Beach's PlaceTypes is the allowance of a mix of uses. "Mixed uses" refer to the integration of compatible and complementary uses within one building, parcel or block—all interconnected in a manner that encourages pedestrian activity. A mixed-use building (vertical mixed use) can include retail uses on the first floor and offices or residential uses on the upper floors.

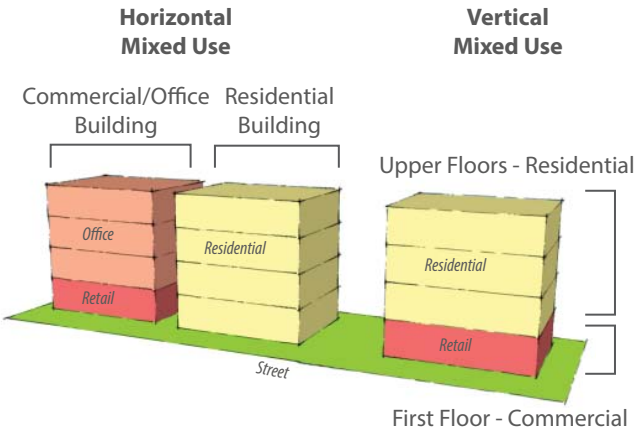
A mixed-use block (horizontal mixed use) can consist of a residential apartment building adjacent to a commercial retail center, both of which are easily accessible to each other (see Figure LU-3).

Providing a mix of uses creates a more pedestrian-friendly, compact environment with structures oriented toward the street, thereby allowing residents to access everyday basic services without dependence on an automobile. Providing a greater diversity of uses within a smaller area not only makes it easier to walk between uses, but also strengthens bicycle and transit modes. The benefits of mixed uses include:

- Greater housing variety and density.
- Reduced distances between housing, workplaces, retail businesses and other destinations.
- More compact, walkable development.
- Stronger neighborhood character.
- Pedestrian- and bicycle-friendly environments.

Prior to the rise of the car culture, many communities traditionally consisted of mixed uses because walking was the predominant form of mobility. With the introduction of Euclidean zoning, uses were segregated from each other—particularly residential and industrial uses—to protect residents from the impacts of loud, noisy and offensive smelling manufacturing activities. This approach eventually was expanded to apply to all nonresidential uses.

Figure LU-3: Mixed-Use Types



Understanding Density, Intensity and Height

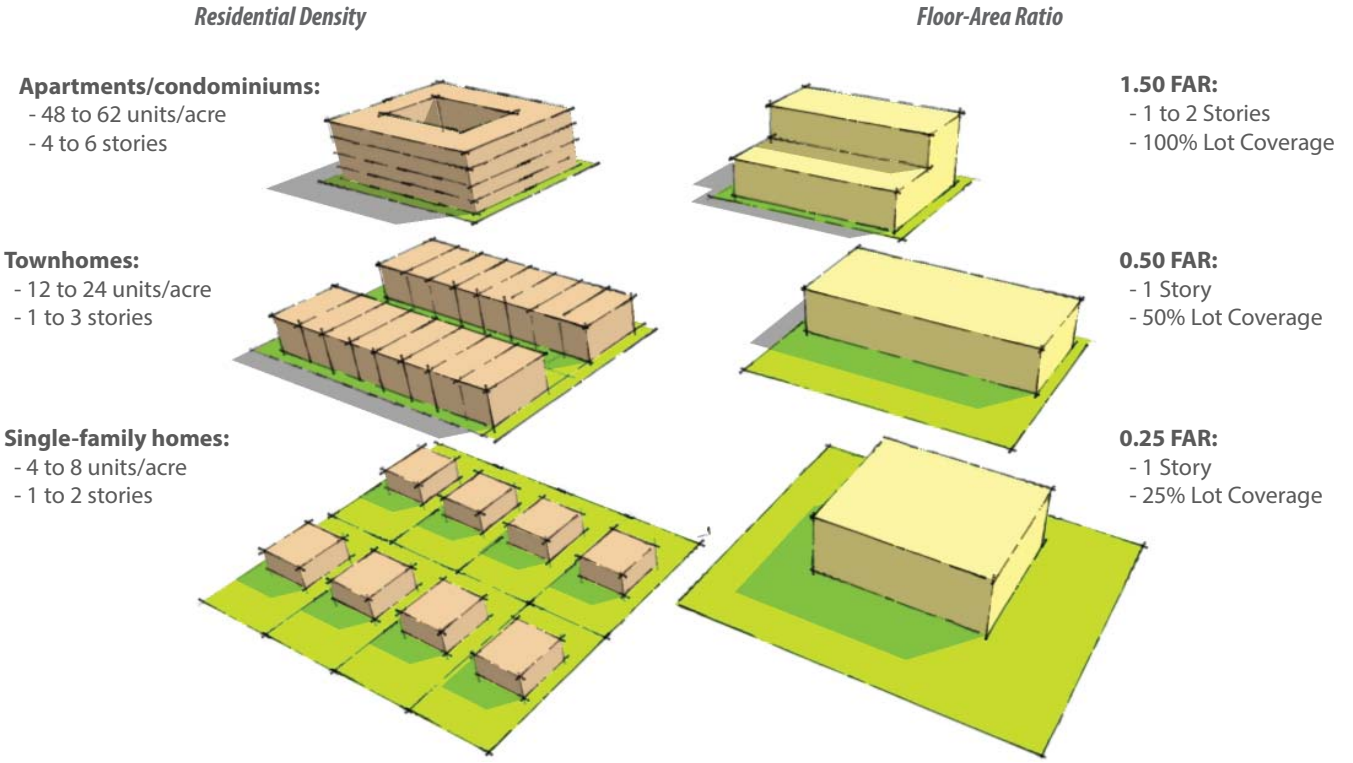
Traditional land use planning approaches use quantitative density and intensity measures to identify how much development may occur on a property.

For residential uses, the term "density" is used. This chapter describes density in terms of the number of dwelling units allowed per acre (units/acre), exclusive of streets and public rights-of-way. This is commonly known as "net density".

For nonresidential uses, the term "intensity" is used. Development intensity addresses the amount of building square footage on a particular parcel or lot. Intensity can be described in many ways, including total building square footage, the percent of the lot the building occupies, the mass of a building, or a floor-area ratio. This Land Use Element uses floor-area ratio (FAR) to describe nonresidential intensity. The FAR defines the ratio of the total gross floor area of all buildings on a lot to the total land area of the lot. It is useful to note that FAR alone does not describe the form of buildings. As Illustrated in Figure LU-4, there are many possible building configurations based on FAR standards. Additionally, the Urban Design element focuses more building placement and other design elements.

Height standards are used to regulate the overall massing and scale of buildings, allowing reasonable compatibility between different buildings and uses. They help ensure an adequate density and intensity of development along City transit corridors. They also create harmonious, pedestrian-sensitive visual settings in low-density residential areas, enhancing the livability of a neighborhood. Furthermore, building heights are an important factor in construction costs. Buildings of five stories or less can use wood framing construction (as allowed under the California Building Standards Code), which is more affordable, particularly for multi-family residential structures. Buildings over five stories require steel framing, which increases overall building costs.

Figure LU-4: Residential Density and Floor-Area Ratio (FAR)



Sample Density Calculation
half-acre lot (0.5 acre) with a 24 units/acre allowance:

24 units/acre X 0.5 acres = 12 units

Sample Intensity Calculation
one-acre lot with a 0.50 FAR allowance:

0.50 FAR X 1 acre (43,560 square feet) = 21,780 square foot building

Depending on the PlaceType and specific location, height standards can be described in either stories or feet, or both (see Map LU-8). In order to calculate the total dwelling units and commercial square footage allowed for a vertical mixed-use building, based on the lot size, the density will determine the number of units and the FAR will determine the total commercial square footage of the building, as long as the building height is under the maximum height limit (stories or feet).

Long Beach PlaceTypes

Eleven PlaceTypes provide a comprehensive and more flexible way of planning for the future of Long Beach. All but three PlaceTypes (Open Space, Industrial and Community Commercial) allow for a mix of uses.

- Open Space
- Founding and Contemporary Neighborhood
- Multi-Family – Low and Moderate
- Neighborhood-Serving Centers and Corridors – Low and Moderate
- Transit-Oriented Development – Low and Moderate
- Community Commercial Centers
- Industrial
- Neo-Industrial
- Regional-Serving Facility
- Downtown
- Waterfront

This section gives an overview of each of these eleven PlaceTypes, including a general description, context statement, allowed uses, development patterns, transitions between land uses, accessibility and general parking principles.

Context. The context section describes the overall context of the PlaceType, including historic context, background information and general intent of the PlaceType.

Land Uses and Development Standards. This section broadly describes the allowed uses within each PlaceType, including accessory uses and public facilities (zoning regulations that implement the General Plan provide more detail on permitted land uses.) General standards are provided for density, intensity and building height limits.

Development Patterns. The development pattern conveys the overall look, feel, location and size of the buildings, parcels, blocks and streets, and describes how they relate to each other.

Transition. The transition describes the interface between different uses and building forms.

Access. Access describes the various modes of transportation used to connect to and from the PlaceType.

Parking. Parking describes the general intent, location and types of parking facilities within a given PlaceType.

PlaceType Tables and Map

Table LU-3 (PlaceType Uses, and Density and Intensity Levels) summarizes the uses, residential density, nonresidential intensity and maximum building heights allowed for each PlaceType.

Map LU-7 (PlaceTypes) presents a pictorial representation of land use and urban policy, and indicates where specific policies will be implemented in neighborhoods and centers, and along corridors.

Map LU-8 (PlaceTypes Height Limits) identifies the maximum building heights and/or number of stories within the PlaceTypes areas.

PlaceTypes and Zoning Districts

It is the policy of this Land Use Element that the PlaceTypes and Zoning Districts are to be consistent with each other. The element's Administration Chapter includes a PlaceType and Zoning District consistency matrix that identifies the PlaceTypes and Zoning Districts that are consistent which each other.

PlaceTypes and the Downtown Plan

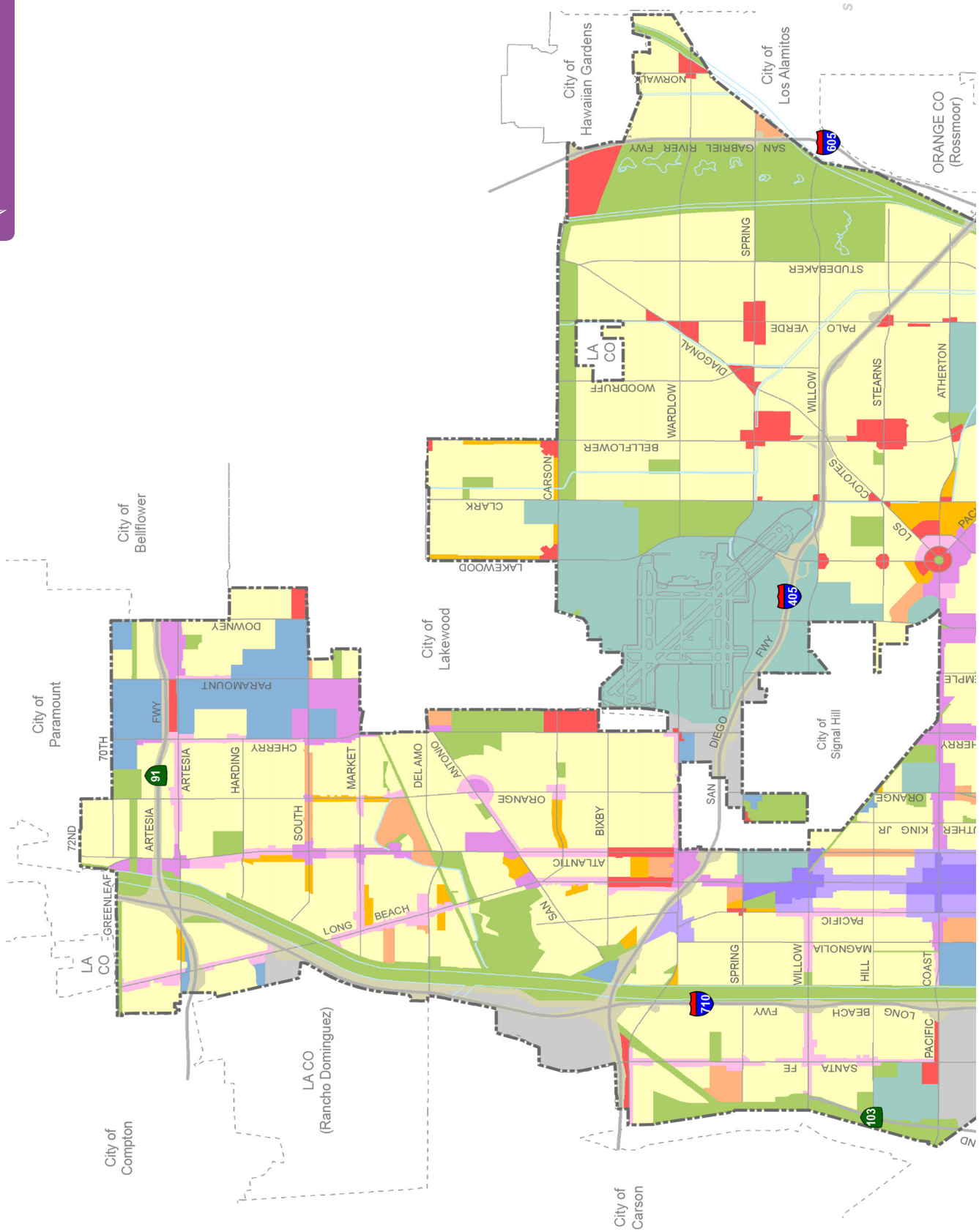
The Long Beach Downtown Plan is consistent with this Land Use Element. The Downtown Plan's development, design standards, streetscape and public realm standards are intended to be consistent with the PlaceTypes and policies in the Land Use Element.

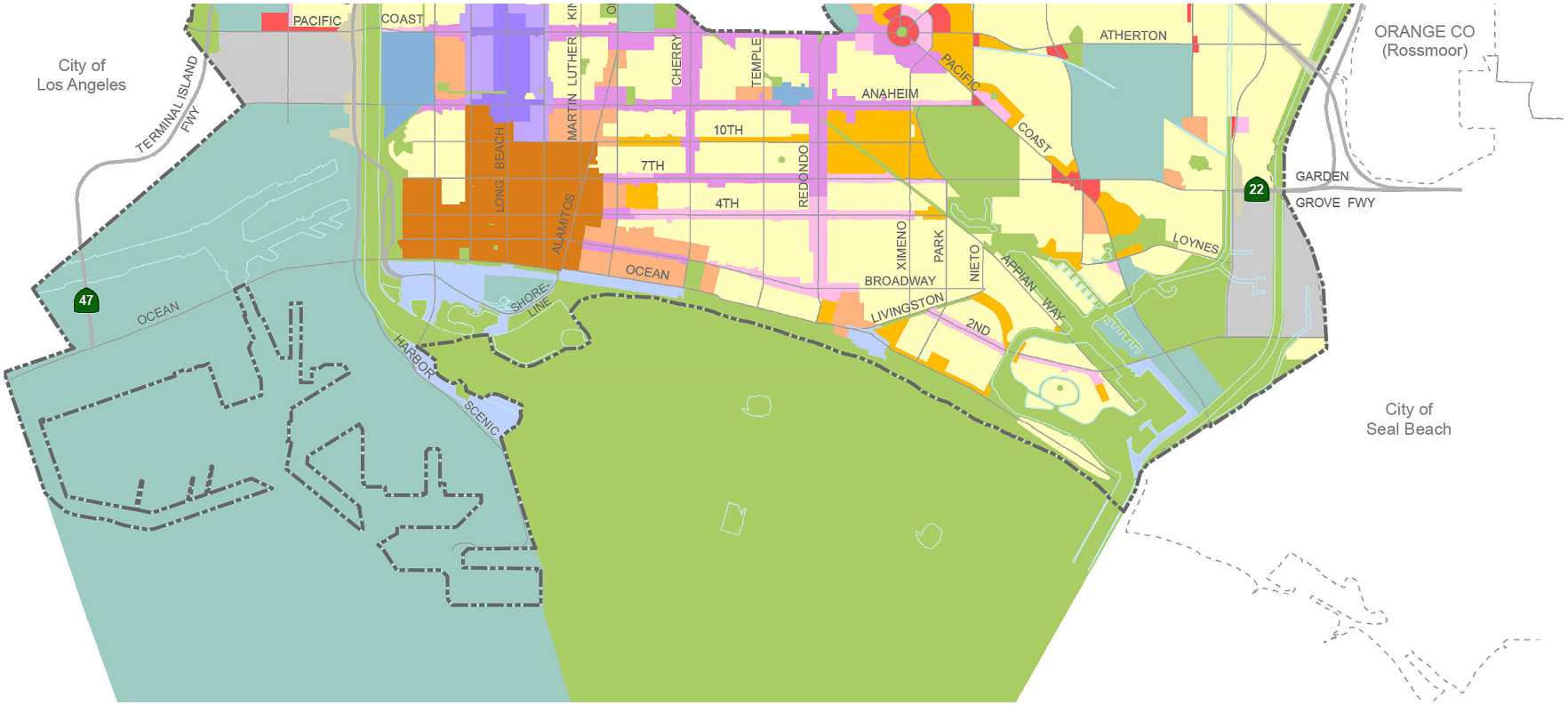
Table LU-3: PlaceType Uses, and Density and Intensity Levels

PlaceType			Uses		Density/Intensity/Height		
			Uses Allowed	Mix of Uses	Residential Density	Nonresidential Intensity (FAR)	Maximum Height [A]
Open Space			Parks, beaches, golf courses, marinas, flood control channels and basins, rivers, utility rights-of-way, oil islands, inland bodies of water, nature preserves, marine habitats, estuaries, wetlands, lagoons; Limited commercial recreation uses that supplement recreation services and complement existing programming and facilities	No	N/A	See Open Space and Recreation Element	2 stories
Neighborhoods	Founding and Contemporary Neighborhood		Single-family and low-density housing; Neighborhood-serving low-intensity commercial uses	Yes	7-18 du/ac	0.25 to 0.50	2 stories; varies by area [B]
Neighborhoods	Multi-Family	Low	Duplex, triplex and garden apartment housing; Neighborhood-serving, low-intensity commercial uses	Yes	Up to 29 du/ac based on lot size	0.25 to 0.50	4 stories
Neighborhoods	Multi-Family	Moderate	Moderate-density apartment and condominium buildings on larger parcels of land; Neighborhood-serving, low-intensity commercial uses	Yes	Up to 62 du/ac based on lot size	0. 50 to 0.75	6 stories
Mixed-Use	Neighborhood-Serving Centers and Corridors	Low	Neighborhood-serving, low-intensity commercial uses; Low-density apartment and condominium buildings	Yes	Up to 44 du/ac based on lot size	0.50 to 1.00	4 stories
Mixed-Use	Neighborhood-Serving Centers and Corridors	Moderate	Neighborhood-serving, moderate-intensity commercial uses; Moderate-density apartment and condominium buildings on larger parcels of land	Yes	Up to 54 du/ac based on lot size	1.00 to 1.50	7 stories
Mixed-Use	Transit-Oriented Development	Low	Low urban density apartment and condominium buildings; Low-intensity commercial uses	Yes	N/A	1.50 to 3.00	5 stories
Mixed-Use	Transit-Oriented Development	Moderate	Moderate urban density apartment and condominium buildings; Moderate-intensity commercial uses	Yes	N/A	2.00 to 4.00	10 stories
Employment	Community Commercial		Commercial and office uses that serve community-based needs for goods and services	No	N/A	2.00 to 4.00	7 stories
Employment	Industrial		Research and development activities, storage, industrial and manufacturing endeavors, tank farms, oil drilling and the like; Limited commercial uses accessory to the industrial business	No	N/A	N/A	65 ft.
Employment	Neo-Industrial		Light industrial, clean manufacturing and offices; Commercial uses accessory to creative business endeavor(s); Repurposed buildings with live/work artist studios [C]	Yes	Up to 36 du/ac based on lot size	0.50 to 1.00	65 ft.
Unique	Regional-Serving Facility		Medical centers, higher education campuses, Port of Long Beach, Long Beach Airport and surrounding areas, public utility facilities (e.g., water, energy), destination retail centers and similar uses	Yes	See Map LU-8 (PlaceType Height Limits)		
Unique	Downtown		See Downtown Plan	Yes	See Downtown Plan		
Unique	Waterfront		Varies by area; see descriptions	Yes	Varies by area; see descriptions		

Note: A A) Height limits can vary within PlaceType areas. See Map LU-8 (PlaceType Heights Limits) for maximum height
B) Height may be increased to three stories as shown on MAP LU-8 consistent with the existing land use pattern.
C) Residential uses are permitted as a component of an employment-generating, adaptive reuse project. Standalone residential uses and/or residential uses associated with new construction are not permitted.
.

Map LU-7
PLACETYPES





Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR-L - Multi-Family Residential - Low
- MFR-M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

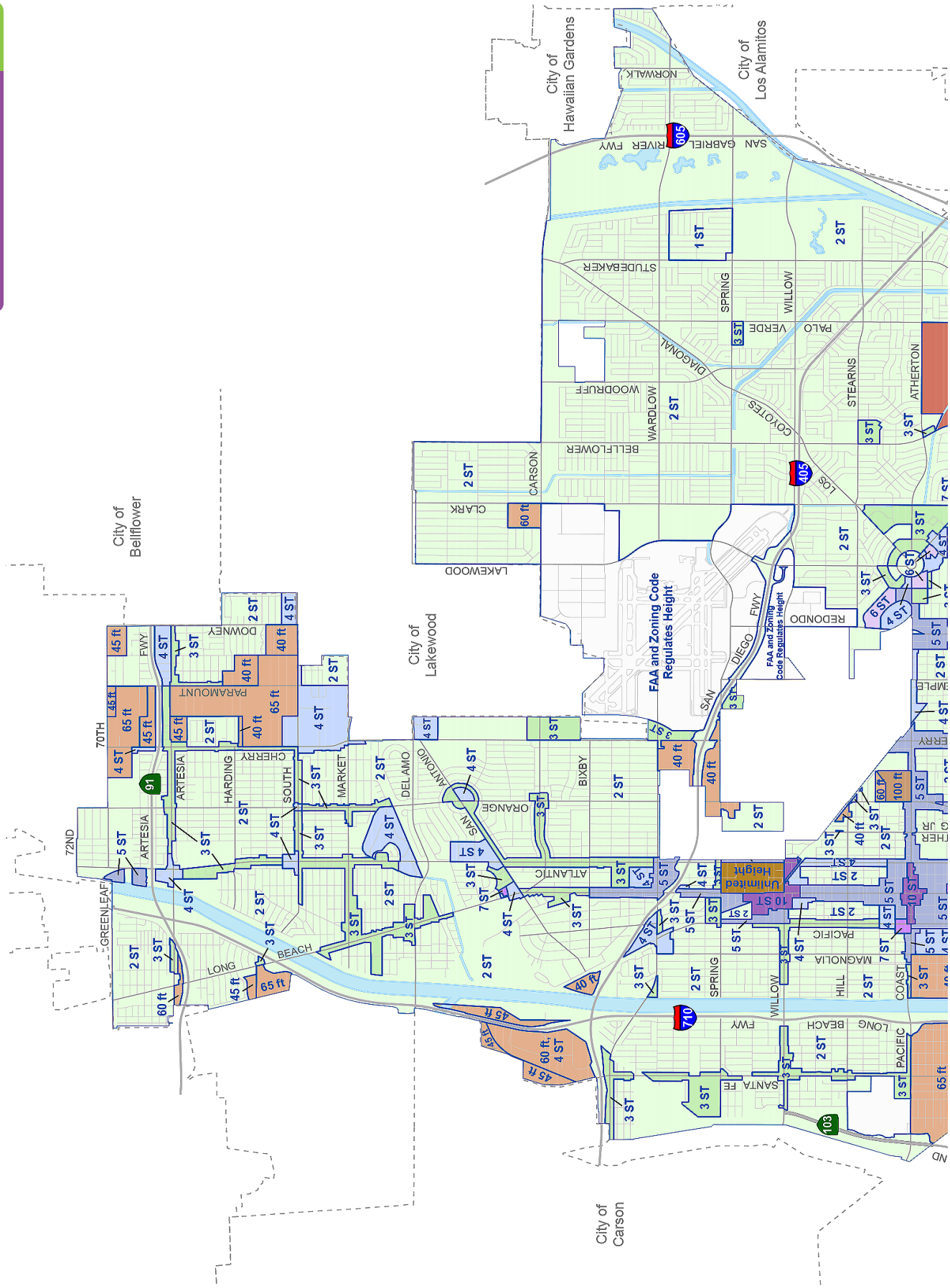
- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

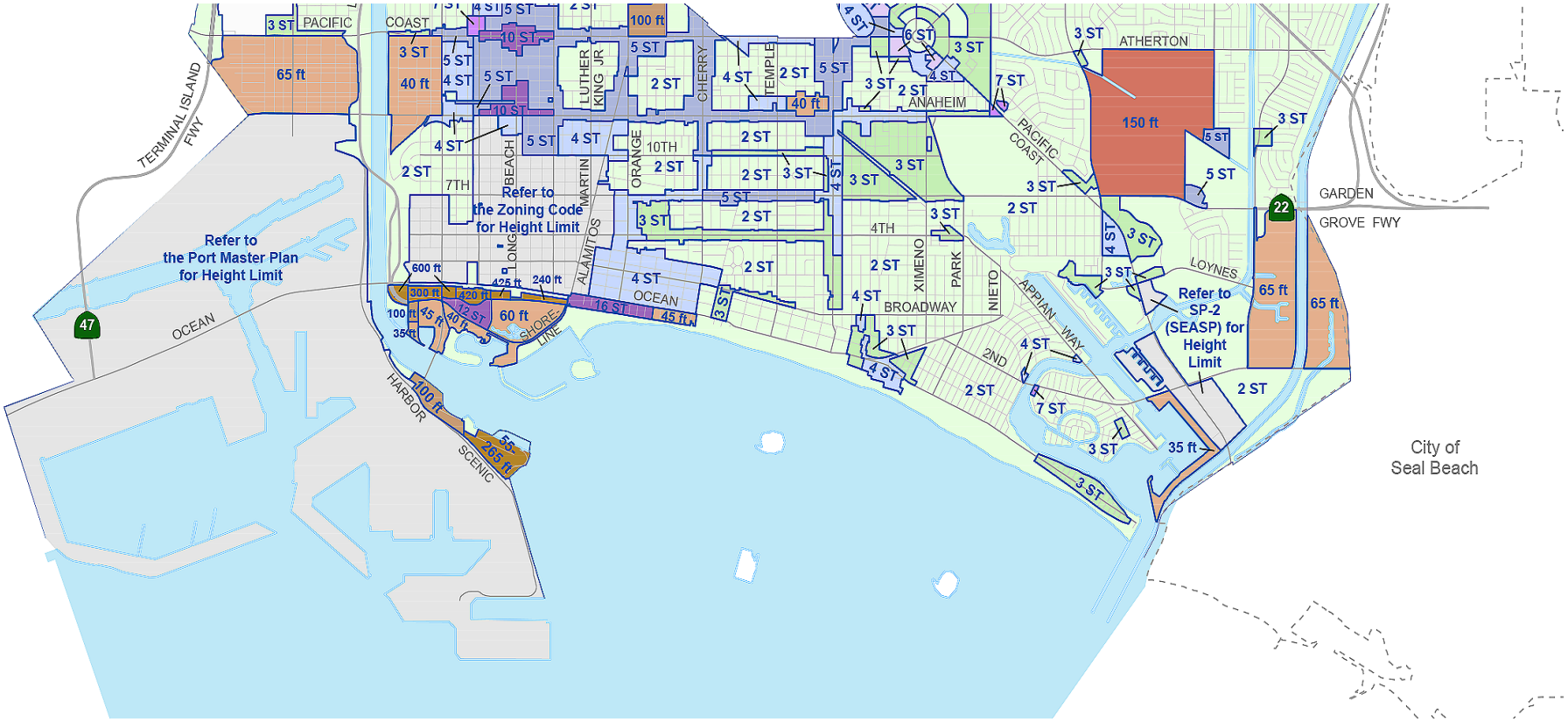
Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius


City of Hawaiian Gardens
City of Los Alamitos
City of Bellflower
City of Lakewood
City of Carson
FAA and Zoning Code Regulates Height
FAA and Zoning Code Regulates Height
Unlimited Height
NORWALK
SAN GABRIEL RIVER FWY
STUDEBAKER
SPRING
WILLOW
PALO VERDE
DIAGONAL
WOODRUFF
WARDLOW
COYOTES
STEARNS
ATHERTON
BELLFLOWER
CARSON
CLARK
LAKEWOOD
LOS
REDONDO
SAN DIEGO FWY
DOWNEY
PARAMOUNT
70TH
72ND
ARTESIA
HARDING
CHERRY
SOUTH
MARKET
DELAMO
SAN ANTONIO
ORANGE
ATLANTIC
BIXBY
GREENLEAF
LONG BEACH
PACIFIC
MAGNOLIA
HILL
COAST
LONG BEACH FWY
SANTA FE
PACIFIC
91
605
405
710
103



Legend

Maximum Building Heights

- 2 Stories
- 3 Stories
- 4 Stories
- 5 Stories
- 6 Stories
- 7 Stories
- 10-16 Stories
- 35 - 75 Feet
- 80 - 100 Feet
- 135 - 150 Feet
- 240 Feet and Over

Please refer to height number for maximum building height

Building Height Boundary

40 FT
4 ST
Building Height (Feet and/or Stories)

Open Space PlaceType

The Open Space PlaceType serves the overall purpose of promoting the emotional and physical health of urban residents through contact with natural environments (see Map LU-8). The Open Space PlaceType provides for the preservation of land that:

- Supports recreational open space.
- Has distinctive scenic, natural or cultural features, contributing to community character and form.
- Provides for utilities and/or infrastructure or that contains environmentally sensitive resources.

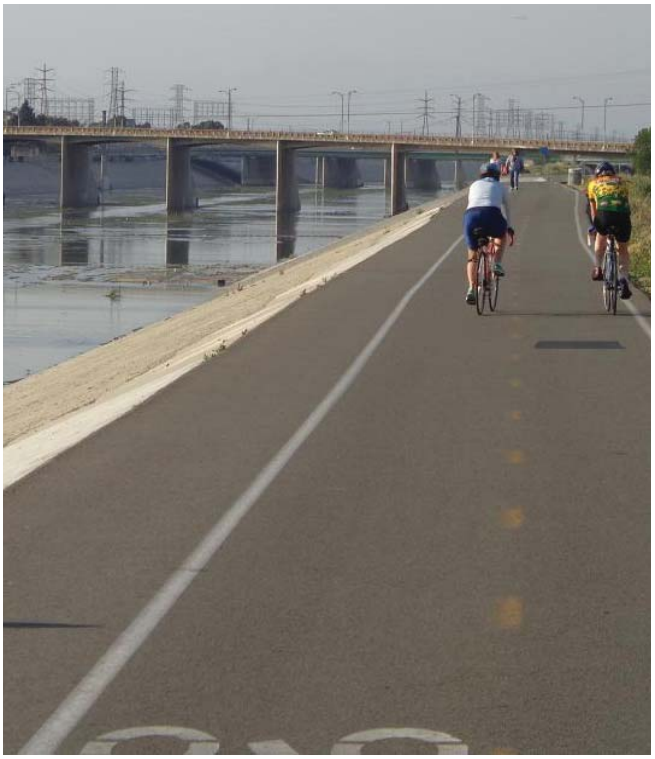
The Open Space PlaceType applies to land and water areas that are undeveloped, generally free from development or developed with very low-intensity uses that respect natural environmental characteristics and are compatible with the open space use. Depending upon their characteristics and intended functions, Open Space PlaceType areas may be used primarily for passive or active recreation use; conservation of land, water, marine and wildlife habitats; historic or scenic purposes; or visual relief.

Context

The Open Space PlaceType encompasses San Pedro Bay, Alamitos Bay and the Pacific Ocean waterfront along the City's southern edge. It also covers the Los Angeles and San Gabriel Rivers and their rights-of-way (levees, bikeways and horse trails). This PlaceType includes Long Beach's parks, golf courses, drainage channels, marinas and beaches, the oil islands, sections of the old Pacific Electric Railway right-of-way, community gardens, nature preserves and estuaries, lagoons and wetlands. The Open Space PlaceType also applies to areas the City would like to see maintained as primarily open in nature, such as beneath the Southern California Edison utility lines that traverse north and west through Long Beach. In this instance, the PlaceType is applied to preserve essential public utility corridors, while at the same time allowing crop cultivation, soccer fields and other uses of a compatible and open nature. All open spaces should contribute to the City's identity and quality of life.

Land Uses and Development Standards. This PlaceType includes parks, beaches, golf courses, marinas, flood control channels and basins, rivers, utility rights-of-way, oil islands, inland bodies of water, nature preserves, marine

Rotary Centennial Park.



Los Angeles River and River Trail.

The Open Space and Recreation Element and the Local Coastal Program of the General Plan include more details on open space and recreation in Long Beach.

Map LU-9
OPEN SPACE PLACETYPE

Legend

PlaceTypes

OS - Open Space

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

habitats, estuaries, wetlands, lagoons and similar open space resources.

» Commercial recreation uses may be permitted if appropriate findings are made (Section 21.52.610 of the Municipal Code), involving uses designed to contribute to a park patron's total experience, supplement the City's recreation services, and complement existing programming and facilities.

» Building coverage is limited in each public park by park type (see Open Space and Recreation Element).
» Buildings are limited to two stories (28 feet maximum).
» Minor expansions of existing open spaces, including the creation of new mini parks or temporary parks, may be found to conform to the General Plan (without amendment) at the discretion of the City's Planning Commission.

Heartwell Park baseball fields.

El Dorado Park Nature Center grounds.

Marina Vista Park includes shade trees, gentle hills and room for organized sports, including tennis, soccer and baseball.

Founding and Contemporary Neighborhood PlaceType

The Founding and Contemporary Neighborhood PlaceType represents Long Beach's low-density residential neighborhoods, from older street car urban neighborhoods (Founding Neighborhoods) to post-World War II suburban housing tracts (Contemporary Neighborhoods) of predominately single-family homes (see Map LU-10).

The Founding and Contemporary Neighborhood PlaceType allows sensitive infill developments and the preservation and protection of single-family neighborhoods, while providing enough flexibility for residents to reinvest and adapt their homes to meet changing lifestyles and long-term maintenance needs.

This PlaceType also encourages enhancements to the public realm, directed at improvements to mobility, visual aesthetics and sustainability. Mobility improvements include better bikeways and pedestrian connections, both within the neighborhood and to the larger community, especially along arterial streets. Opportunities for improving transit, whether by bus or streetcar, will be essential as residents look for alternatives to the automobile.

Context. Many of Long Beach's historic neighborhoods date back to the late 1800s, when the City was a seaside destination along the Red Car Pacific Electric Railway. The pedestrian-scaled block layout in downtown and along transit routes catered primarily to those traveling by foot rather than by automobile. Largely composed of traditional architecturally-styled homes—Craftsman, Mission Revival and Spanish Revival—the Neighborhood PlaceType values historic preservation and promotes architectural compatibility to protect the integrity of older single-family neighborhoods.

Additionally, a considerable amount of single-family housing was built in Long Beach following World War II, particularly in the eastern and northern portions of the City. Subdivisions were developed for "modern" living, and were not served by trolley cars. These areas are characterized by long blocks and wide streets. Neighborhoods are less walkable than Long Beach's older neighborhoods where living units are often conveniently located above retail shops in mixed-use buildings.

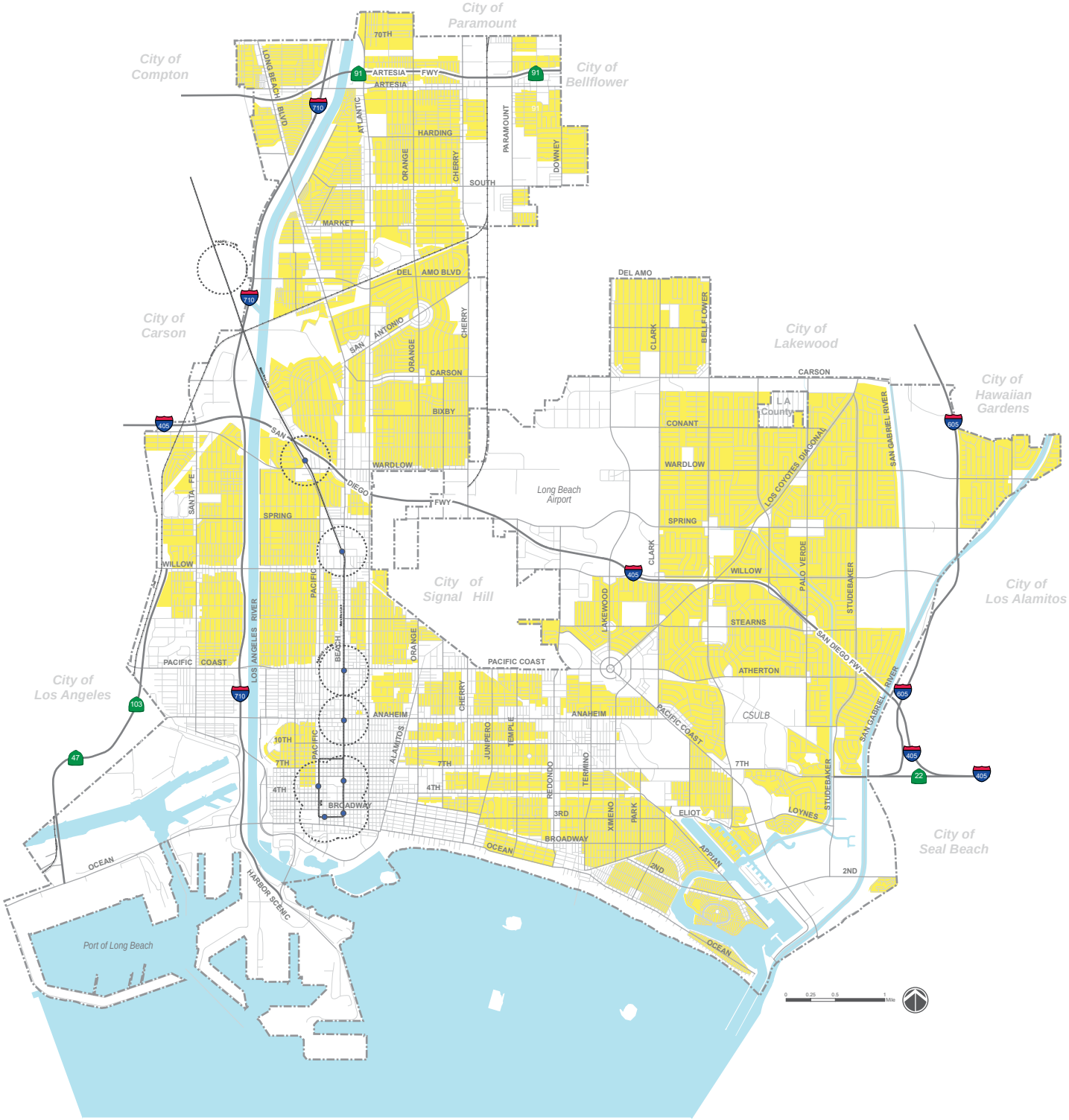
Street car urban neighborhood - Bungalow.

Post World War II neighborhood - University Park Estates.

Low-density homes in the California Heights Historic District.

Southeast neighborhood single-family homes.

Map LU-10
FOUNDING AND CONTEMPORARY NEIGHBORHOOD PLACETYPE



Legend

PlaceTypes

N - Founding and Contemporary Neighborhoods

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Land Uses and Development Standards. This PlaceType encourages low-density housing at one or two stories in height, along with appropriately scaled multi-family structures, compatible public facilities and small-scale neighborhood serving commercial uses. This PlaceType prohibits incompatible, large-scale multi-family structures, as well as other uses that would detract from the established architectural character of the neighborhood. Preferred uses and development standards include:

- Single-family and low-density housing (7 - 18 units/acre)
- Typical population density is 20 - 51 persons/acre.
- Neighborhood-serving, low-intensity commercial uses (0.25 - 0.50 FAR).
- Schools, parks, daycare, senior care, police and fire stations, libraries, and other compatible public uses.
- Buildings are limited to two stories in height (28 feet maximum), or three stories consistent with MAP LU-8.

Development Pattern. This PlaceType promotes maintaining single-family homes while allowing neighborhood edges, transitions and key intersections to have appropriately scaled multi-family structures, public facilities and small-scale neighborhood-serving commercial uses.

Transitions. Transitions work to integrate the neighborhood with surrounding land uses in a manner that reinforces the established fine-grained character. New multi-family buildings will be designed to reflect the characteristics of single-family homes to allow for better integration. All new development will respect the height, massing and open space characteristics of the neighborhood.

Access. Steps should be taken to better connect all neighborhoods to the larger transit network, provide better bicycle connections and facilities, and focus on pedestrian activity and sidewalk/streetscape improvements that will make all neighborhoods enjoyable, easy places to walk.

Parking. Generally, standard parking requirements will be applied to new development. However, the City may allow reduced parking where appropriate to encourage retention of historic and cultural resources and/or to promote transit usage. Consistent with the City's sustainable development goals, use of permeable paving and preservation of landscaping and yard areas will help capture water on-site and manage urban runoff. On-street parking and other tools will be used to help calm traffic on excessively wide streets.

Large canopy trees, architectural character, setbacks, sidewalks and parkways add to the visual character of the streetscape.

A single-family home in the Wardlow Park neighborhood.

Multi-Family Residential – Low and Moderate PlaceTypes

The Multi-Family Residential PlaceTypes can provide highly desirable options for a range of lifestyles (see Map LU-11).

The Multi-Family Residential–Low PlaceType represents the housing stock in lower density multi-family residential areas, with a maximum density of 29 dwelling units per acre. This PlaceType is scattered throughout the City, sometimes associated with larger housing developments, and often serving as a buffer use between less intense and more intense residential neighborhoods (see Map LU-10). The Multi-Family Residential–Low PlaceType is also applied to areas where downzoning has been used in the past to protect neighborhoods from further development that cannot be supported by the underlying infrastructure.

Multi-Family Residential - Low: three-story townhomes.

Multi-Family Residential - Moderate: five-story apartment building.

The Multi-Family Residential–Moderate PlaceType represents housing in moderate-density residential areas with maximum densities of 48 to 62 dwelling units per acre, depending on lot width. This PlaceType allows larger buildings and denser housing than in Multi-Family Residential–Low. In select areas, such as near the Traffic Circle, the Multi-Family Residential–Moderate PlaceType has been applied to encourage new housing opportunities—bikeable or via transit—not far from California State University at Long Beach and within walking distance of commercial shopping centers. Where density allowances are higher than that which already exists on the ground, the recycling of development will only occur if and when market economics support it.

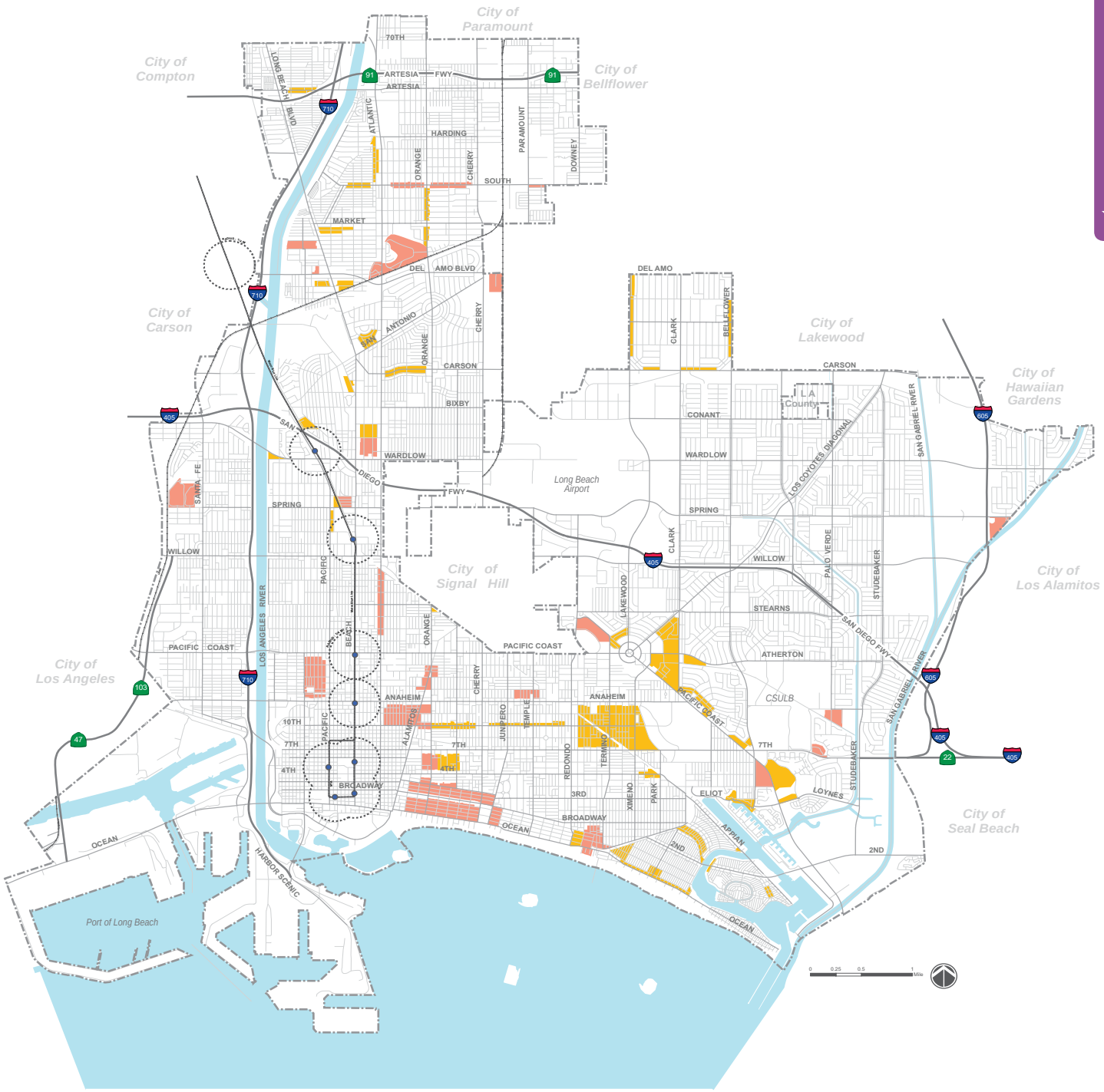
Context. Long Beach has both newer (post-1980) and older multi-family residential areas, with some of the earliest wood-clad apartment buildings (or boarding houses) dating back to the early 1900s. Some of these buildings have become bed and breakfasts or hostel-type accommodations for Long Beach visitors; many others represent affordable workforce housing opportunities.

Preserving older multi-family housing stock in a sound condition is a major focus for the Long Beach community. Where such housing has deteriorated to a point where reconditioning is neither feasible nor desirable, new multi-family housing may be considered under the standards and guidelines provided in this plan. The importance of high-quality design is essential when new multi-family residential developments are introduced in Long Beach.

With a few exceptions, the Multi-Family Residential PlaceTypes (both low- and moderate-density) are pedestrian-friendly places, especially in long-established neighborhoods designed around the original streetcar transit routes. Many newer developments take advantage of the City's bus and light rail passenger services. Priority locations have been identified for supporting an enhanced pedestrian experience (see Mobility Element). In the Multi-Family Residential PlaceTypes, creating optimum pedestrian access to nearby goods and services, and transit stops must always be considered.

Land Uses and Development Standards. This PlaceType encourages a wide variety of multi-family housing products ranging from two to six stories in height. Compatible

Map LU-11
MULTI-FAMILY RESIDENTIAL - LOW AND MODERATE PLACETYPES



Legend

PlaceTypes

Multi-Family Residential

- MFR-L - Multi-Family Residential - Low
- MFR-M - Multi-Family Residential - Moderate

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

public facilities and neighborhood-serving commercial uses are also encouraged. Preferred uses and development standards include:

Multi-Family Residential – Low

- Duplex, triplex and garden apartment housing (3 units/lot, lots equal to or greater than 120 feet wide: 29 units/acre).
- Typical population density is up to 82 persons/acre.
- Neighborhood-serving, low-intensity commercial uses (0.25 - 0.50 FAR).
- Schools, parks, daycare, senior care, police and fire stations, and libraries.
- Buildings not to exceed three stories in height (38 feet maximum).

Multi-Family Residential – Moderate

- Moderate-density apartment and condominium buildings on larger parcels of land (3 units/lot, lots equal to or greater than 120 feet wide: 48 units/acre; lots equal to or greater than 180 feet wide: 62 units/acre).
- Typical population density is 136 - 175 persons/acre.
- Community-serving commercial uses (0.50 - 0.75 FAR).
- Schools, parks, daycare, senior care, police and fire stations, libraries.
- Buildings not to exceed 6 stories in height (65 feet maximum).

Development Pattern. The Multi-Family Residential PlaceTypes promote well-designed infill housing where multi-family residential already exists or where project residents would be well-served by proximity to commercial and transit services. Designs should contribute to walkable streets by: incorporating pedestrian-oriented building frontages; balancing building massing with usable on-site open space; allowing edge transitions; accommodating mixed-use building approaches where commercial services are lacking and providing innovative multi-family housing options that address the varying needs of residents.

Transitions. Multi-Family Residential PlaceType neighborhoods should be integrated with surrounding uses to encourage appropriate transitions in height and massing. The design of multi-family buildings must relate to surrounding context, whether it is historic or associated with a recognizable design era. All development must exhibit a high standard of design and materials, maintain privacy standards, and require public frontages that contribute to the larger street and block character.

Access. New development and major remodels will maintain the walkable aspects of multi-family residential areas and reinforce connections to the larger transit network. New projects should respond to the existing and planned transit and bicycling routes that link to Long Beach's colleges and university campuses, parks and recreation facilities, and shopping and employment centers. The City will focus sidewalk and crosswalk improvements on pedestrian amenities and connectivity to local activity centers.

Two-story, low-scale apartment building adjoining a Founding Neighborhood PlaceType in Bixby Knolls.

Direct and convenient access to the sidewalk.

Parking. Generally, standard parking requirements will apply unless reduced parking can be used to promote retention of historic and cultural resources, or where a development is adjacent to frequent transit service. Opportunities for shared or district parking shall always be explored where such an approach would help ameliorate parking shortages in parking-impacted districts. The City will also promote and accommodate creative ways to provide additional parking on smaller sites, such as automated, stacked parking in structures.

Multi-Family Residential - Low: three-story townhomes with walk-up entrances.

Open space amenities.

Neighborhood-Serving Centers and Corridors – Low and Moderate PlaceTypes

The Neighborhood-Serving Centers and Corridors–Low PlaceType is composed of low-rise, low-intensity mixed-use (housing and retail) commercial centers and corridors designed to meet consumers' daily needs for goods and services close to residential areas (see Map LU-12). Ideally, residents could walk to these locations for shopping, personal services or dining. This PlaceType applies to locations where shopping combined with low-density housing is desirable from both a land use and mobility perspective. This is frequently the case at major street intersections and/or along established neighborhood shopping corridors, particularly where these corridors are served by transit.

Neighborhood-Serving Center and Corridor - Low.

The Neighborhood-Serving Centers and Corridors–Moderate PlaceType is characterized by medium-rise, moderate-intensity mixed-use (housing and retail) commercial centers and corridors that provide goods and services conveniently located relative to housing.

Neighborhood-Serving Center and Corridor - Moderate.

Context. Commercial corridors (streets flanked by commercial uses and framed by housing) and centers (nodes of commerce and social activity often located at major intersections) are located throughout Long Beach. Some neighborhood-serving centers have existed for decades and are sites for local markets, banks, restaurants and other services located within easy walking distance to residences.

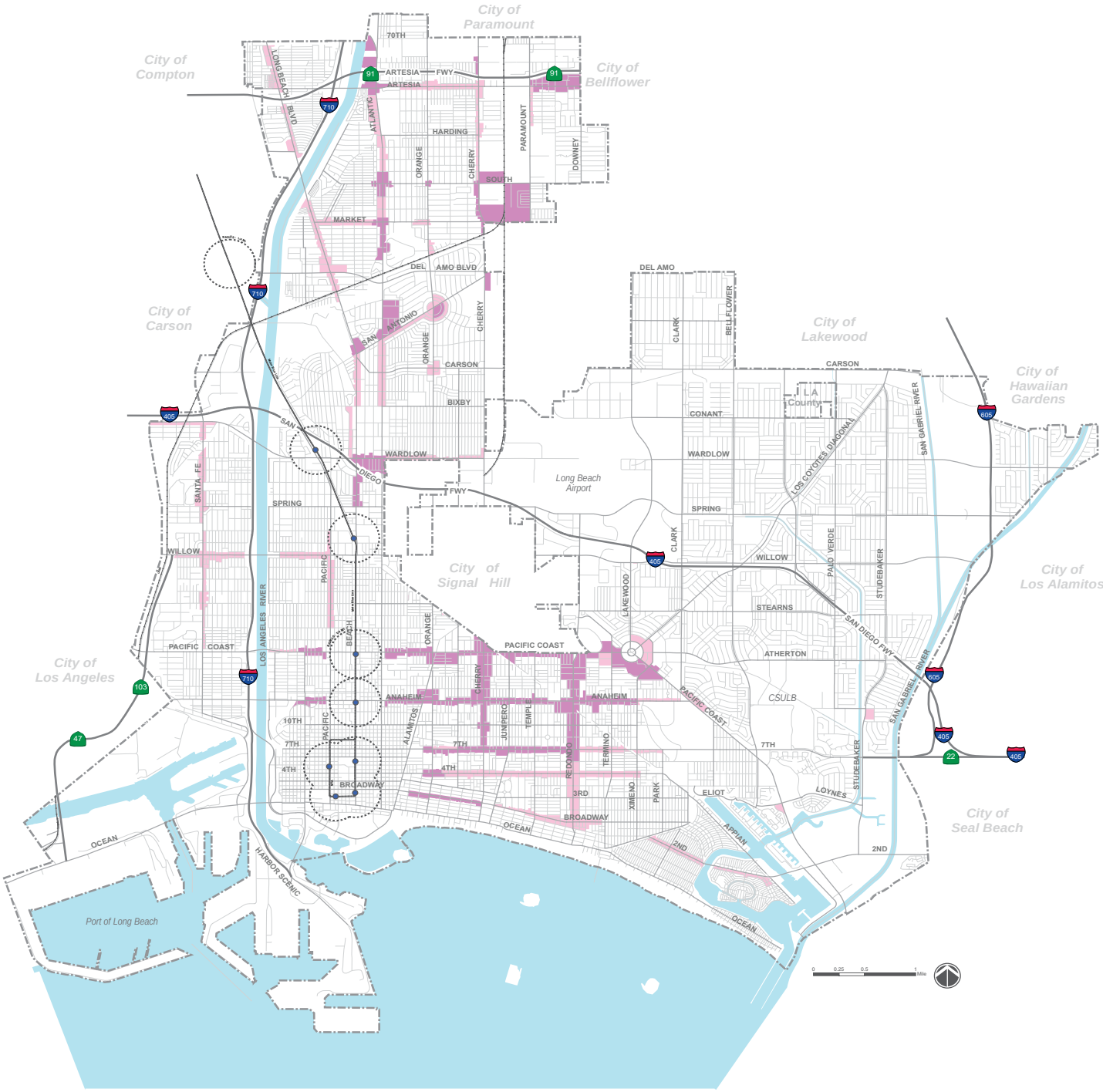
The Neighborhood-Serving Centers and Corridors PlaceType strategically designates small-scale centers for local users in several instances: where they exist today, where they have a foothold but need encouragement, and where they may be lacking but should be established. This PlaceType benefits the surrounding community by promoting or reinforcing a neighborhood's unique identity, accommodating daily retail and service needs, focusing on healthy goods and services, enhancing pedestrian and bicycle connections to neighborhoods, providing community gathering places and providing convenient access to transit. A major challenge in developing some of these locations will be creating sufficient lot depth to support viable retail projects with multiple owners or tenants. A sensitive transition to adjoining residential neighborhoods also requires adequate lot depth for setbacks of building masses.

Land Uses and Development Standards. This PlaceType encourages mixed-use, commercial and apartment buildings and condominiums ranging from three to five stories in height. A variety of commercial uses is encouraged to meet consumers' daily needs for goods and services, including but not limited to restaurants, cafes, retail shops, financial institutions, fitness centers and other daily conveniences within walking distance from residential uses. Compatible public facilities are also encouraged. Preferred uses and development standards include:

Neighborhood-Serving Centers and Corridors- Low

- Neighborhood-serving, low-intensity commercial uses (0.5 - 1.0 FAR).
- Low-density apartment and condominium buildings (6 units/lot, 44 units/acre maximum).
- Typical population density is up to 125 persons/acre.
- Schools, parks, daycare, senior care, police and fire stations, libraries and similar facilities.
- Buildings not to exceed three stories in height (38 feet maximum).

Map LU-12
NEIGHBORHOOD-SERVING CENTERS AND CORRIDORS – LOW AND MODERATE PLACETYPES



Legend

PlaceTypes

Neighborhood Serving Center or Corridor

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

Neighborhood-Serving Centers and Corridors-Moderate

- Neighborhood-serving, moderate-intensity commercial uses (1.0 - 1.5 FAR).
- Moderate-density apartment and condominium buildings (9 units/lot, 54 units/acre maximum).
- Typical population density is up to 153 persons/acre.
- Schools, parks, daycare, senior care, police and fire stations, libraries and similar facilities.
- Buildings up to seven stories (75 feet maximum) per the PlaceType height limits (Map LU-8).

Development Patterns. The Neighborhood-Serving Centers and Corridors PlaceType is defined by low-and moderately-scaled neighborhood-serving development encompassing a mix of nonresidential uses. Neighborhood-serving centers and corridors are typically located near Founding Neighborhoods with a tighter street grid, but they exist adjacent to Contemporary Neighborhoods as well. The majority of more moderately-dense Neighborhood -Serving Centers and Corridors are concentrated in the central area of the City along Broadway, Fourth Street, Seventh Street, and along Anaheim Street between Alamitos the Redondo. Less-intense Neighborhood-Serving Centers and Corridors are found in segments along north Long Beach Boulevard, north Atlantic Avenue and on Willow Street west of Pacific Avenue.

The Neighborhood-Serving Centers and Corridors PlaceType encourages compact development and discourages large buildings adjacent to single-family homes. Additional uses and conditions that are discouraged include: auto repair shops, insufficient pedestrian connections to neighborhoods, and uninterrupted segments of wide streets that are unfriendly to bicycle and pedestrian traffic.

The same basic principles guide development patterns for Neighborhood-Serving Centers and Neighborhood-Serving Corridors, with some differences in emphasis. Corridors focus on linear connections between destinations and the quality of the pedestrian environment. Traffic calming measures may be necessary, such as mid-block crossings to help shoppers and other pedestrians safety cross the street. Neighborhood-serving uses that can be accommodated within a shallow building site can be located along linear segments, particularly where parcel consolidation to create deeper lots is not feasible. Centers found at intersections often abut residential uses, making thoughtful building transitions more critical. Transitions to lower density residential neighborhoods in these areas must include landscape buffers in addition to building setbacks and massing controls. Parcel consolidation is more feasible at major street intersections where larger neighborhood retail centers or mixed-use retail/residential buildings already exist. As such, these centers can provide a focal point and serve to anchor a major neighborhood retail corner.

Transitions. Developments should be transitioned from four to five stories at the center to two- to three-story townhomes or row houses, then to one- to two-story housing at the outer edges. Furthermore, mixed uses and more building intensity should be located nearest the center of this PlaceType, with housing or lower-scale buildings at the periphery. Commercial circulation and parking should be located away from surrounding single-

Belmont Shore.

Cienega condominiums at Pacific Coast Highway and Grand Avenue.

family homes, and signage and lighting must be sensitive to existing residential neighbors. Gateway elements should be developed to help define neighborhood edges and provide transitions into centers along lengthy corridors.

Access. Development should be compact and have an interconnected pedestrian network to promote walking. The Neighborhood-Serving Center or Corridor should support multi-modal circulation, including bicycle and transit use. To improve linkages to the surrounding neighborhoods, the streetscape should feature enhanced sidewalks, curb extensions at important crosswalks and limited automobile curb-cuts on primary pedestrian routes where driveways can be provided on side streets. Main streets should be designed so that automobile speeds are compatible with a comfortable environment for foot traffic.

Parking. Cars are welcome in this PlaceType, and street parking is encouraged to buffer the sidewalk zone from passing cars and buses. District or shared-use parking may be an appropriate strategy where parking is difficult to accommodate on small individual parcels. Where a parking structure is used, it should have active ground-floor uses or be designed to be tucked within or under other building uses to preserve the sidewalk environment rather than detract from it. Angled or reverse angled parking should be used where appropriate. Shared parking opportunities should be explored so residents can park once if they must drive, and reduce parking impacts on residential streets. Adequate amounts of shared parking should be provided as density increases over time.

Pedestrian-friendly streetscape.

Neighborhood-serving commercial.

Well-designed streetscape with outdoor dining.

Transit-Oriented Development Low and Moderate PlaceTypes

The Transit-Oriented Development–Low PlaceType encourages multi-family housing at densities that provide a transition from lower-density single-family neighborhoods to the higher-density housing planned for the Metro Blue Line station, as well as existing and future bus, shuttle and other mass transit routes and stations.

The Transit-Oriented Development–Moderate PlaceType is applied directly adjacent to the Blue Line stations, but can be designated to complement future transit systems. This PlaceType encourages multi-family housing at densities that support mass transit's function and public investment. New housing and public amenities are desirable near each station along the transit corridor.

Context. The Blue Line light rail has provided regional transit service to the City since 1990. The in-street platform stations and landscaped transit parkways have a bold presence on Long Beach Boulevard and through the downtown loop. The Transit-Oriented Development PlaceTypes were created to capitalize on the passenger rail system by encouraging higher-density development within a one-quarter mile of the local rail stations. This PlaceType and its mix of uses should support the surrounding neighborhoods and become an exciting, vibrant location to live and work with regional transit connections just steps away.

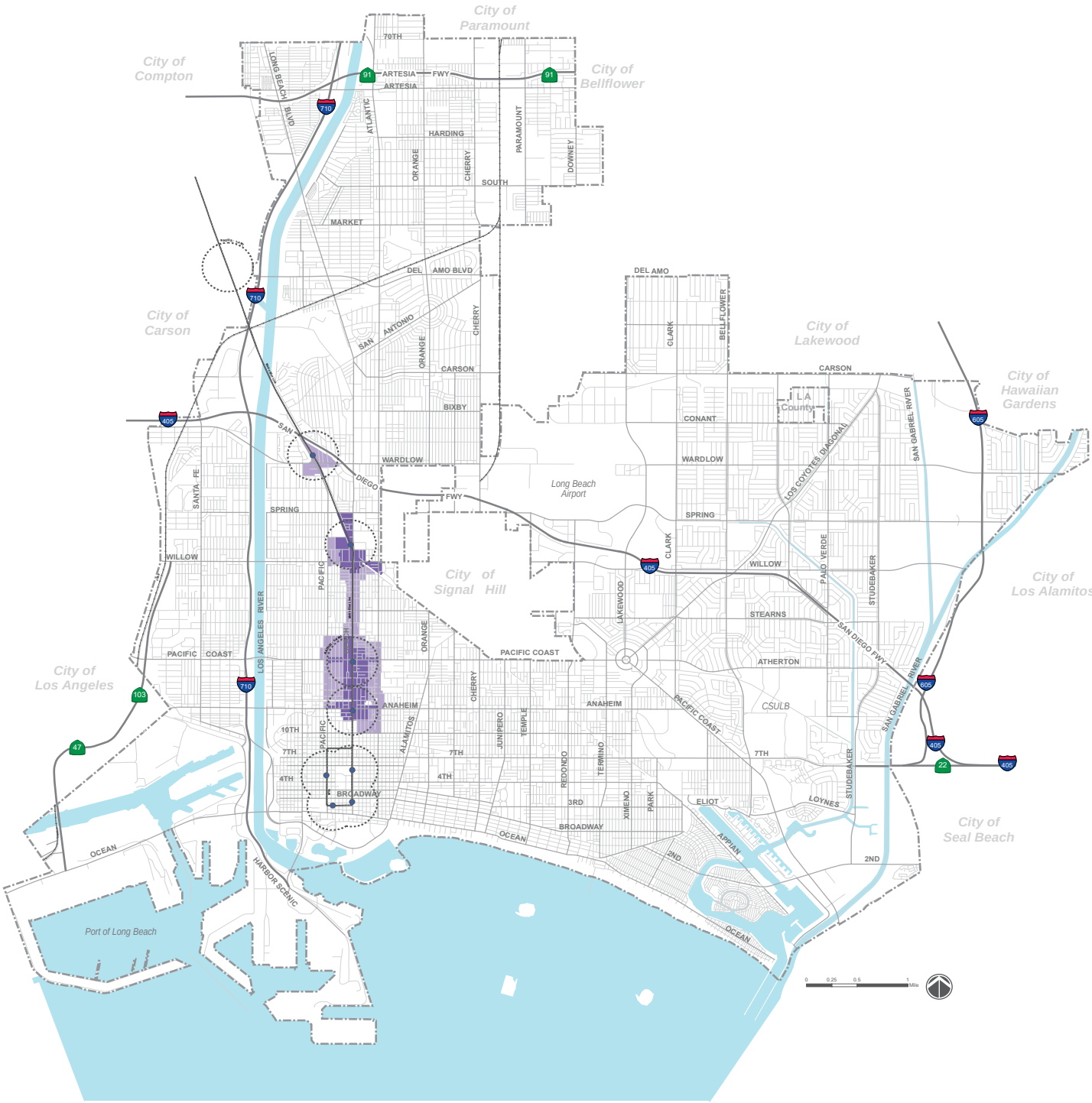
Implementing this PlaceType will meet a major sustainability goal for the City: to better integrate and connect appropriate land uses and housing densities with investments in transit infrastructure. Additional transit-oriented districts may be candidates for consideration when future routes are designated for new rail, streetcar or bus rapid transit systems.

The Transit-Oriented Development PlaceTypes designates properties surrounding the Blue Line route for future growth and development of housing units. The Transit-Oriented Development locations are well-served by public transit and will offer a mix of uses to support housing in a pedestrian-friendly environment. This PlaceType also seeks to attract more local businesses, increase job opportunities in higher density transit-accessible developments, generate new sales and property tax revenues and serve as a gateway between downtown and the waterfront.

Land Uses and Development Standards. This PlaceType encourages mixed-use and commercial buildings, apartments, condominiums, and community-serving commercial uses. A mix of commercial uses is encouraged to meet consumers' daily needs for goods and services, including restaurants with outdoor dining, cafes, retail shops, grocery stores and other uses that support a

Olive Court condominiums are within a short walking distance to the Pacific Coast Highway Metro Blue Line Station.

Map LU-13
TRANSIT-ORIENTED DEVELOPMENT - LOW AND MODERATE PLACETYPES



Legend

PlaceTypes

- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

pedestrian-friendly, active streetscape and accommodate transit riders. Preferred uses and development standards include:

Transit-Oriented Development-Low

» Low urban density apartments and condominium buildings (5 units/lot, 44 units/acre).
» Typical population density is up to 125 persons/acre.
» If fronting directly on Long Beach Boulevard, community-serving commercial uses contained in mixed-use (housing and commercial) developments on large lots (1.50 -3.00 FAR).
» Schools, parks, daycare, senior care, police and fire stations, libraries and similar facilities.
» Buildings not to exceed five stories in height (65 feet maximum).

Transit-Oriented Development-Moderate

» Moderate urban density apartments and condominiums (7 units/lot, 62 units/acre).
» Typical population density is up to 175 persons/acre.
» If fronting directly on Long Beach Boulevard, Anaheim Street, Pacific Coast Highway or Willow Street, community-serving commercial uses contained in mixed use (housing and commercial) developments on large lots (2.00 -4.00 FAR).
» Schools, parks, daycare, senior care, police and fire stations, libraries and similar facilities.

Development Patterns. Transit-Oriented Developments should provide a mix of uses in a pedestrian-oriented environment, within a single development or within a one-quarter mile radius of a transit station, with the greatest intensity of development concentrated nearest the station.

Transitions. Larger-scale developments must step down and respect smaller scale developments behind the Long Beach Boulevard light rail corridor. Building massing must also be sensitive to smaller buildings behind the corridor. The Transit-Oriented Development–Low and Transit-Oriented Development–Moderate PlaceTypes restrict height and guide the massing of buildings and setbacks in order to gracefully handle the transition from more intense to less intense developments.

The Long Beach Senior Arts Colony is within a block of the Anaheim Street Metro Blue Line station.

Access. Circulator buses and streetcar services offered along the light rail corridor should be linked to activity centers elsewhere in the City. Significant pedestrian activity should be accommodated along the light rail corridor. Crosswalks should be created and/or enhanced, mid-block crossings and curb extensions may be added; paseos and public plazas are encouraged. Significant bicycle use should be planned along routes intersecting with this transit corridor.

Parking. Contextually-appropriate parking strategies must be developed to support the light rail transit function along Long Beach Boulevard. Such strategies may include: establishing base parking requirements for mixed-use shared facilities; establishing a parking district; considering car sharing; and consolidating parking in structures, underground, on street corners or wrapping into ground-floor retail. Bicycle parking racks and lockers should be provided in every parking structure to allow transit users to use bicycles as a cost-effective, healthy and convenient way to begin or end their transit trip.

Community Commercial PlaceType

The Community Commercial PlaceType serves our auto-oriented need for goods and services, promotes commerce and provides local jobs. This PlaceType does not allow housing and is reserved for commercial activities only. Customers of businesses located in the Community Commercial PlaceType will generally arrive by car and expect to find convenient parking. As the City grows its multi-modal transportation network, auto-oriented commercial corridors and centers are expected to play a diminishing role. However, such centers and corridors are nonetheless accommodated in this plan.

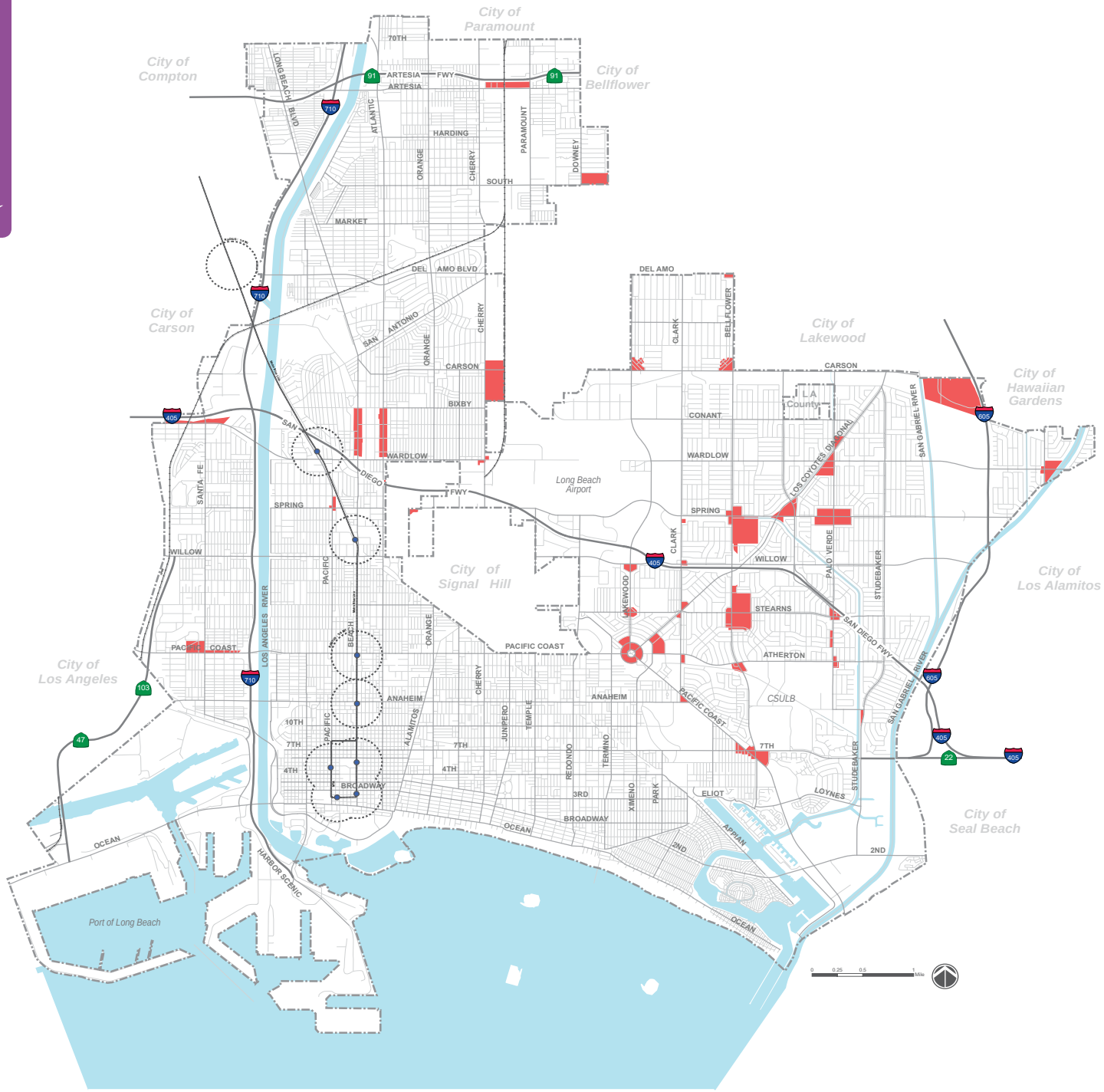
Context. Community-serving businesses play a vital role in meeting the commercial shopping and service-based needs of Long Beach businesses and residents. However, due to some limitations in parcel size and depth—for example along Pacific Coast Highway—abrupt transitions to residential neighborhoods, limited business diversity and lack of overall coordinated design have resulted in areas that are placeless and difficult for pedestrians to navigate. Similar to the Neighborhood-Serving Center PlaceType, Community Commercial businesses exist in both linear and centric form (along corridors and in shopping centers). The Community Commercial PlaceType applies to a few select segments of major arterial corridors and larger-scale commercial shopping centers (outside of the Waterfront and the Downtown PlaceTypes). These centers and corridors will vary in design detail and scale depending on their location, access and parcel sizes.

Land Uses and Development Standards. This PlaceType encourages a wide range of local and community-serving commercial uses in buildings no higher than five stories or 60 feet. These may include auto sales and repair, appliance sales and repair, furniture stores, hardware stores, clothing stores, restaurants, grocery stores, fast-food outlets and similar uses. Preferred uses and development standards include:

» Commercial uses that serve community-based needs for goods and services (0.25 - 1.0 FAR).
» No residential uses are allowed.
» Buildings not to exceed six stories in height (65 feet maximum).

Located at Carson Street and the I-605 freeway, the Long Beach Towne Center offers a mix of retail, dining and entertainment uses.

Map LU-14
COMMUNITY COMMERCIAL PLACETYPE



Legend

PlaceTypes

CC - Community Commercial

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Development Patterns. The Community Commercial PlaceType promotes development projects that can be made compatible with adjacent residential uses. Although this is the auto-oriented commercial PlaceType, future developments are expected to respect neighboring developments. Although auto-oriented, this PlaceType encourages a more pedestrian-friendly environment within a development and connections to adjacent transit stops. Transit stops must be well integrated with sidewalks and pedestrian amenities provided for transit users.

Transitions. Adequate setbacks along with visual and noise buffers must be provided to separate auto-oriented developments from adjacent residential neighborhoods. Buildings must transition in scale to the adjacent neighborhood, and single-family attached units or multi-family residential uses should act as a transition between the auto-oriented corridor and the adjacent single-family neighborhood.

Access. Access to auto-oriented businesses should be provided with the minimum required curb-cut width to make the sidewalk more navigable for pedestrians. Sidewalk extensions or bulb-outs should also be considered where needed to slow or discourage automobile traffic into the residential areas and to improve pedestrian crossings at side streets. Without such provisions, automobiles will continue to drive quickly on these segments of cross-town traffic corridors. Where deemed necessary by the City Traffic Engineer and Long Beach Transit, building setbacks should be provided at new auto-oriented commercial centers and corridors to create an attractive sidewalk environment and better accommodate transit stops.

Parking. Vehicle parking must be very convenient in the Community Commercial PlaceType. However, on-street parking along primary automobile and transit corridors may need to be restricted during peak commute hours. Commercial parking must be designed so that it does not exacerbate parking issues in neighborhoods that are already impacted by a shortage of available residential parking.

Easy accessibility for automobiles.

Attractive sidewalk environment with rear parking.

Commercial uses that serve community-based needs for goods and services.

Industrial PlaceType

The Industrial PlaceType includes all industrial activities: light industrial research parks, warehousing or storage activities, industrial manufacturing and machining operations (see Map LU-15). Historically, industrial land uses have played a critical role in the City's economic development, from oil drilling and shipbuilding to airplane manufacturing. Where the Industrial PlaceType is applied, continued industrial activities are strongly encouraged. Industrially-developed lands should be preserved, particularly for the expansion of quality employment opportunities. Conversion of industrial lands to nonindustrial uses is generally discouraged in this plan.

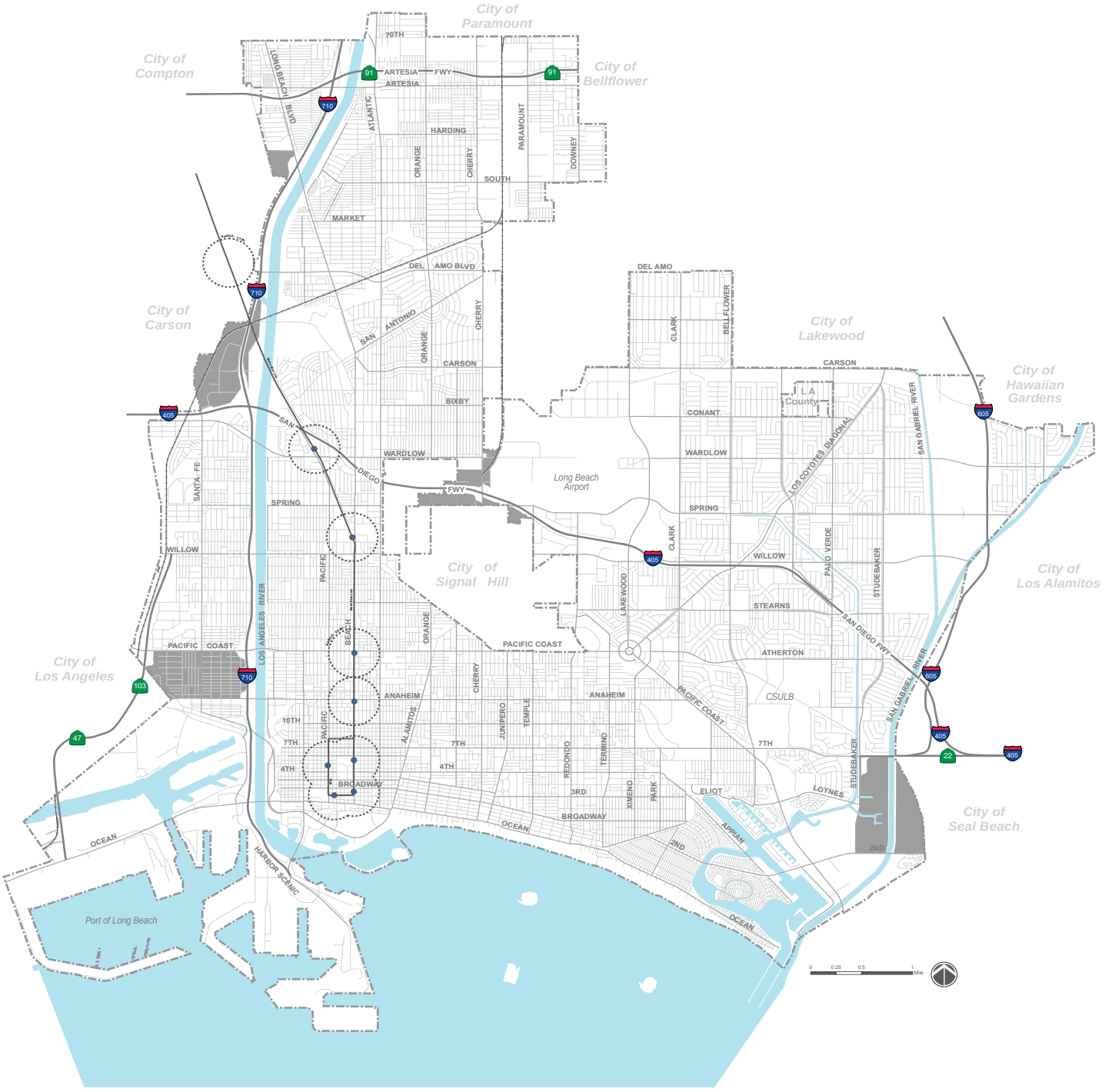
Most industrial activities in Long Beach are well-separated from residential uses. New residential uses (except for on-site caretaker units) are not allowed within the Industrial PlaceType. For those industrial uses that are undesirably situated, long-established planning, building and safety regulations are in place to ensure that proper buffering between industrial uses and nearby residential neighbors is provided.

Context. For those industries in which the processes of manufacturing, storage and distribution have not fundamentally changed for decades, industrial areas in Long Beach will remain as they were developed years ago. In other areas, evolution of business types has created industrial sites that are underutilized and have less-than-desirable employment yields, limiting opportunities for employment of residents and revenue generation. The latter represent opportunity areas for innovation and investment. Additionally, some older industrial areas are directly adjacent to or across from residential neighborhoods, with transitions between these two land uses less than ideal.

Long Beach intends to maintain its most viable and promising industrial areas to readily accommodate this basic employment sector and guide future industrial development to be more compatible with adjacent nonindustrial uses. The Industrial PlaceType is also intended to: guide reinvestment and reuse of industrial areas in a cleaner and more sustainable manner, retain and enhance employment opportunities, develop

Industrial building.

Map LU-15
INDUSTRIAL PLACETYPE



Legend

PlaceTypes

I - Industrial

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

improved transitions and open space buffers between existing industrial and residential enclaves, and encourage clean supporting uses that buffer industrial uses and long-existing homes.

Land Uses and Development Standards. The Industrial PlaceType is reserved for manufacturing, processing, construction and heavy equipment yards, warehousing of products, research and development, creation of prototypes and a broad range of similar industrial practices and processes. This PlaceType prohibits nonindustrial uses, except for on-site caretaker units and commercial accessory uses needed to serve the industrial PlaceType. All other residential uses are prohibited. Places of religious worship may be considered if they do not replace the industrial employment opportunities intended for the Industrial PlaceType. Preferred uses and development standards include:

» Research and development activities, storage, industrial and manufacturing endeavors, tank farms, and oil drilling.
» Limited commercial uses accessory to the industrial business.
» Major utility facilities.
» Police and fire stations.
» Buildings not to exceed four stories (65 feet maximum) (see Map LU-8 -PlaceType Height Limits).

Development Patterns. In a preferable future industrial land use scenario, lower scale buildings occupied by less -intense industrial uses and operations would be used to transition to nearby residential neighbors, while more intense, heavy industrial operations would be internalized within an Industrial PlaceType, farther away from residential uses. The range of permitted industrial intensity increases as more distance is achieved between industrial and residential uses. All outdoor storage areas must be appropriately screened from public view. The City's noise, fire safety, and neighborhood-protecting ordinances will apply. Appropriate lighting, circulation, parking, landscaping, loading and security of industrial facilities is required.

Transitions. Buffers should be created between residential and active industrial uses. New industrial developments must be set back from sensitive neighbors (e.g., schools, parks, residences) using surface parking, landscaped open space buffers and lower buildings. More intense industrial uses must be sited away from the neighborhood. Incompatible land uses and operations are to be located away from and screened from view of residential neighbors.

Industrial trucks in West Long Beach.

Industrial building.

Further, industrial uses must always comply with federal, State and City regulations for noise, emissions, traffic circulation and other environmental considerations.

Access. Pedestrian, bicycle, transit and vehicular access to industrial sites must be considered and accommodated as conditions allow. Adequate regional roadway and freeway access is required. Shuttle and circulator bus services should be considered to provide alternative transportation modes.

Parking. Standard parking requirements shall be applied.

Neo-Industrial PlaceType

The Neo-Industrial PlaceType encourages the location, evolution and retention of restricted light industrial activities associated with innovative start-up businesses and creative design offices in the arts, engineering, sciences, technology, media, education, information industries, among others (see Map LU-16). Office use may constitute 50 percent of a Neo-Industrial business as this PlaceType allows for a higher concentration of employees on-site than the Industrial PlaceType. Further, limited retail uses that support the primary office, research, development and manufacturing functions of Neo-Industrial businesses are permitted. Certain live/work housing opportunities with a focus on job creation for the preservation of sound existing buildings are also permitted.

The Neo-Industrial PlaceType is not intended for traditional industrial businesses. Traditional businesses should be located in the Industrial PlaceType or in the port and airport areas of Long Beach. The Neo-Industrial PlaceType is intended to support the arts and information age which is experiencing a revolution in design and manufacturing.

The Neo-Industrial PlaceType has been established to make it easier for leading-edge innovators to launch a successful foothold in the marketplace by allowing small and evolving incubator industries to share resources (e.g., energy, machines, support staff and ideas) and co-working spaces (e.g., conference rooms, kitchenettes, restrooms). These arrangements can lower business start-up costs and help control overhead expenses. For example, a small manufacturer of a unique medical product may find it desirable to locate in the Neo-Industrial PlaceType so that they can co-locate with other small technology manufacturers in a structure or structures that also support their accounting, advertising, networking or other business needs. Likewise, another medical device innovator might want to use the same precision manufacturing facility to create their unique product. Ideally, many new prototypes, patents and products would emerge and grow from the businesses located in Neo-Industrial PlaceType.

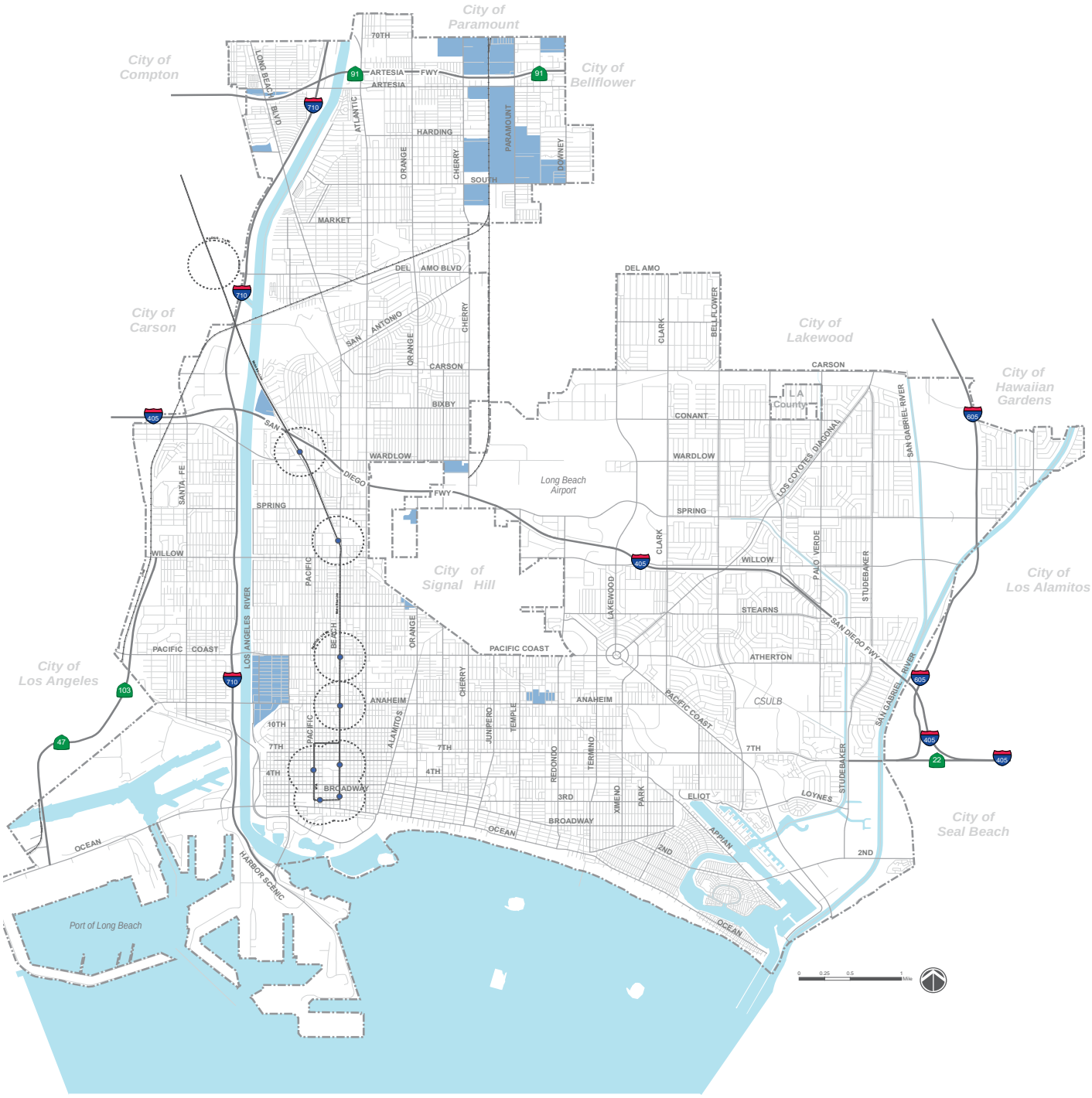
Innovative start-up businesses and creative design offices.

Context. The Neo-Industrial PlaceType is applied to several areas that could most benefit from this designation: 1) eight areas above Market Street in North Long Beach; 2) the Zaferia area on Anaheim Street and Obispo Avenue; and 3) the Magnolia Industrial Group (MIG) area located between Anaheim Street and Pacific Coast Highway west of Magnolia Avenue. All of these areas have existing industrial businesses and characteristics, significant residential interfaces, and are located along major roadway corridors. However, only Zaferia and MIG have existing buildings which may be considered suitable for adaptive reuse or live/work opportunities. In these areas, where quality buildings from an earlier time could benefit the district by being preserved and repurposed, live/work artists (e.g., painters or sculptors) may be allowed to reside in studios if the surrounding conditions are amenable to such a use. In this way, the Neo-Industrial PlaceType aims to facilitate the creation of art in Long Beach and the retention of artistic talent nurtured by local high school, college and university arts programs. The Neo-Industrial PlaceType supports Long Beach's cultural initiatives by creating a place for our artists to live affordably while practicing their crafts.

The North Long Beach Neo-Industrial PlaceType areas do not offer the same opportunities for building reuse. In North Long Beach, Neo-Industrial uses do not include a residential or live/work component. Rather, Neo-Industrial uses are limited strictly to manufacturing and office uses with an allowance for retail sales and commercial businesses that support the primary Neo-Industrial endeavors. Here, Neo-Industrial businesses are required to use the office space as a buffer to adjacent residential uses, and manufacturing operations must be located away from residences.

Land Uses and Development Standards. The Neo-Industrial PlaceType may be considered a

Map LU-16
NEO-INDUSTRIAL PLACETYPE



Legend

PlaceTypes

NI - Neo-Industrial

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

commercial manufacturing hybrid zone for promoting the development of new products on behalf of the creative class. It introduces an emerging business model where entrepreneurs may develop new ideas into prototypes, test them, fund them, and eventually create new or improved consumer or commercial products. The Neo-Industrial PlaceType allows for co-working and sharing of functions and spaces for small business start-ups. Also, where retaining existing buildings and reusing them is desirable, the Neo-Industrial PlaceType allows for live/work artist studios with accompanying gallery spaces. Preferred land uses and development standards include:

» Light industrial and clean manufacturing; offices; commercial retail (including restaurants) supporting and accessory to manufacturing and office uses (0.50 - 1.0 FAR).
» Repurposed buildings with live/work artist studios (0.50 - 1.0 FAR and 36 du/ac).
» Typical population density is up to 102 persons/acre.
» Buildings not to exceed three stories in height (60 feet maximum).

Development Patterns. This PlaceType promotes low-intensity uses adjacent to low-density residential uses and medium-intensity uses adjacent to industrial uses. In new Neo-Industrial developments this basic rule must always be respected. For existing industrial buildings, the existing scale of development, building sizes, heights and access routes should be maintained. Existing development patterns must be respected. Preserving the stock of older industrial buildings is key to maintaining the character of the Neo-Industrial PlaceType in both the Zaferia and MIG districts.

Transitions. The Neo-Industrial PlaceType is used as a buffer between existing industrial and residential neighborhoods. Where new developments are inserted in the Neo-Industrial PlaceType, office and commercial uses rather than industrial and manufacturing operations, should abut residential neighbors. Visual screens must be provided wherever possible between new live/work units and existing heavy or unenclosed industrial operations. Where new development is adjacent to residential uses, buildings must step down to match permitted residential building heights. Development intensity must also be graduated from lower intensity near residential neighbors to moderate intensity near wholly industrial uses.

Access. Because the Neo-Industrial PlaceType is expected to accommodate light industrial operations, trucks and commercial vehicles must be given consideration in each design. Roads and alleys should be maintained and improved to function well for service access and loading, but they should also be made safe and walkable for district tenants and residents. The Neo-Industrial PlaceType must accommodate bicycles, pedestrians, transit and vehicles, and offer good sidewalk connectivity. Improving pedestrian access between streets and blocks must routinely be considered when redeveloping sites.

Parking. In Long Beach, industrial uses normally require two parking spaces per 1,000 square feet of industrial development, and commercial uses require four spaces for the same amount of commercial square footage. Thus, in new Neo-Industrial PlaceType developments, the basic standard will be three parking spaces per 1,000 square feet of development where at least 50 percent of the development must be for industrial use. Shared parking may be considered where converted industrial sites/buildings lack sufficient lot size or where clusters of adaptive reuse properties can be well-served by consolidated parking. Carpools, vanpools, transit access and other reasons for reduced parking will be considered by the Planning Bureau through the Site Plan Review process, which will determine the appropriate level of parking demand reduction generated by these strategies on a project-specific basis.

Example of adaptive reuse.

Regional-Serving Facility PlaceType

Context. Long Beach is a large city with a number of facilities that serve the sub-region and the region. These institutions, business concentrations, employment centers and campuses have large physical footprints, generally occupying multiple acres of land. All serve a wide geographic radius and clientele. Both public and private institutions (for-profit and not-for-profit) may be regional-serving in scope. Regional-serving uses may be isolated from other uses in the City, limiting their potential economic benefits to Long Beach. For example, if California State University at Long Beach had better transit connections to the rest of the community, greater cooperation and collaboration could occur with the rest of the City. Specifically, there are opportunities for improved connections to the port, the medical centers, the city colleges, emerging college preparatory high schools and the downtown's East Village Arts District. Such a united front of educational institutions working with local businesses and industries could multiply the benefits for those living and investing in Long Beach. The Regional-Serving Facility PlaceType pays special attention to how these facilities interface with the surrounding and broader community. The designation recognizes and allows for the highly specialized needs of regional public and private facilities, while simultaneously ensuring substantial public benefits.

Established Regional-Serving Facilities in Long Beach are fully described in Chapter 3, Context, as they are so unique and different. The following briefly summarizes the long-term planning summary for each regional facility.

» **Long Beach Airport.** The Long Beach Airport, located at the I-405 freeway and Lakewood Boulevard, is one of the oldest municipal airports in California. The airport

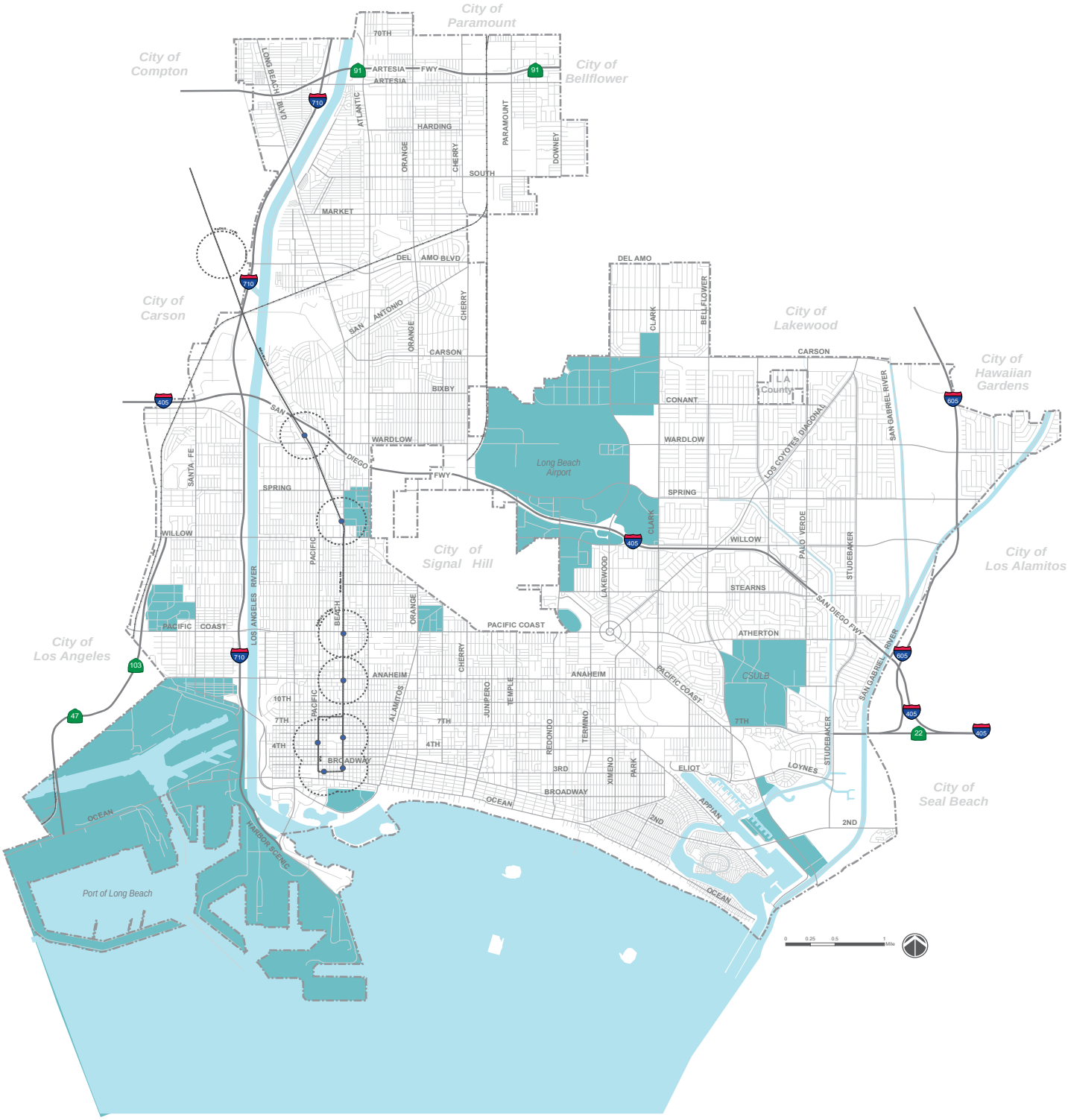
Long Beach City College Library Learning Resource Center.

Miller Children's Hospital Long Beach.

The Port of Long Beach.

Douglas Park business master planned community.

Map LU-17
REGIONAL-SERVING FACILITY PLACETYPE



Legend

PlaceTypes

RSF - Regional Serving Facility

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

supports many uses: commercial, corporate and general aviation services; flight schools; air cargo; manufacturing and business parks. Surrounding areas include the Kilroy Airport Center, Douglas Park, Boeing offices, and a Mercedes-Benz regional automobile prep and testing center. The Regional-Serving Facility PlaceType for the airport area focuses on consolidating properties surrounding the airport to better integrate business parks and airport-related land uses, and to transition former manufacturing facilities to mixed-use office, light industrial, innovation and technology and hospitality uses. The Long Beach Airport and surrounding areas are a gateway to Long Beach; as well as an economic engine for the region.

» **Port of Long Beach.** The Port of Long Beach, the second-busiest container port in the United States, is located along the Long Beach waterfront, near the terminus of the Los Angeles River. A key goal for the port is to remain an innovative provider of seaport facilities while enhancing the local and regional economic environment. Port leadership is committed to improving environmental conditions associated with operations. The Port of Long Beach Master Plan provides a planning tool to guide port development and ensure that projects and developments in the Harbor District are consistent with the requirements of the California Coastal Act.

» **California State University at Long Beach.** The campus, founded in 1949, sits on 324 acres in East Long Beach and has an enrollment of over 30,000 undergraduate students. California State University Long Beach is a diverse, student-centered, globally engaged public university committed to providing highly valued undergraduate and graduate educational opportunities through superior teaching, research, creative activity and service for the people of California and the region. Their Campus Master Plan identifies new educational facilities and housing opportunities, as well as infrastructure improvements, to benefit its constituents and integrate well into the broader Long Beach community.

» **Veterans Administration Long Beach Healthcare System.** Located adjacent to California State University Long Beach, the VA Long Beach Healthcare System provides comprehensive inpatient, outpatient and extended care programs. The medical center and its community clinics employ more than 2,000 people and provide health care for more than 50,000 veterans.

» **Long Beach City College Pacific Coast Highway and Liberal Arts Campuses.** Founded in 1927, Long Beach City College, with two separate campuses (Liberal Arts Campus – LAC and Pacific Coast Highway Campus – PCC), promotes workforce development by delivering high-quality educational programs and support services to Long Beach's diverse communities. Long Beach City College is committed to the Long Beach College Promise, designed to improve college preparation, access and completion for members of the greater Long Beach community. The Long Beach City College 2020 Unified Master Plan identifies the long-term building and facilities program. The PCH Campus, tied with Chittick Field (sports park site) serves as a potential campus expansion area. As of 2015, both campuses were undergoing major facility renovations and building expansions.

» **Long Beach Convention & Entertainment Center.** The Long Beach Convention & Entertainment Center is located in Downtown Long Beach adjacent to the waterfront. This regional facility is managed by the City's Long Beach Convention and Visitors Bureau and includes over 400,000 square feet of exhibition halls and meeting spaces, including several theaters and a large arena. The center has a regional and international draw for tourism and convention business, supporting the surrounding hotel and entertainment uses. The Long Beach Convention & Entertainment Center will continue to be a destination for meetings, conventions, trade shows and tourism.

» **Long Beach Memorial Medical Center.** The Long Beach Memorial Medical Center is a major regional provider of medical and surgical services. To respond to changes in health care systems delivery and structural building standards, and to better connect to the surrounding community with outpatient clinics and other similar services, the medical center plans future improvements pursuant to its master plan.

» **Southeast Area Specific Plan (SEASP).** The SEASP area is located between the SR-22 freeway and 2nd Street, along the San Gabriel River. The district includes

residential neighborhoods, parks, coastal wetlands and a diversity of commercial and hospitality uses. The SEASP provides guidance in establishing this area as an important gateway and regional destination in Long Beach, as well as ensuring that the future built environment is pedestrian friendly, includes lively public spaces and complements the natural areas.

» **Technology Center.** The former Navy housing complex, located east of the Terminal Island Freeway and north of Pacific Coast Highway within West Side Long Beach, is being repurposed following its closure as a military facility. The buildings and grounds, as well as new construction, offer opportunities for social services, transitional housing, research and development center, regional retail center and several schools and park facilities.

Land Uses and Development Standards. The Regional -Serving Facility PlaceType has been applied to sites and areas in the City that serve a unique role, or population, that reaches beyond local concerns. Regional-serving facilities include: medical centers, the Port of Long Beach, our city colleges and university, the Department of Motor Vehicles, the City's Health Department, Ability First, and other social service and public facilities clustered around Willow Street and Grand Avenue, and around the Westside's Villages at Cabrillo and CSULB Technology Park. The Regional-Serving Facility PlaceType also includes Boeing and Douglas Park, the Long Beach Airport, business parks and lands surrounding the airport. Additionally, it includes the formerly industrially-designated parcels in southeast Long Beach, where the Haynes and AES plants are located. These areas are included in the Regional-Serving PlaceType in order to preserve these utilities and lands for potential future public-serving utility uses, such as a seawater desalination plant, biological water treatment facility, or perhaps a solar or wind farm.

Preferred land uses include uses that serve a regional need for medical and social services, education, goods movement, people movement, energy production and distribution, public utilities, and uses of a similar nature

Many of Long Beach's regional-serving facilities have their own approved master plans or specific plans for development, including: the Port, airport, business parks near the airport, Douglas Park, Memorial Medical Center and California State University at Long Beach. This plan respects the direction provided in those documents and encourages the evolution of multi-modal mobility options, better pedestrian connectivity and more environmentally-healthy and sustainable practices within each of these campuses. This Land Use Element requires that all Regional-Serving Facilities have an updated Master Plan.

Each Regional-Serving Facility PlaceType is limited to the building heights indicated on the PlaceType Height Map (see Map LU-7).

LADWP Haynes Generating Plant in Southeast Area Specific Plan (SEASP).

Development Patterns. Land use planning for large regional facilities must address compatibility with the surrounding environment. This PlaceType promotes: keeping facility uses and development intensities that may produce significant off-site nuisances internal to the regional facility; prioritizing programs that address ancillary operational impacts to the community; and prioritizing sustainability initiatives in the updates of facility master plans as a fundamental means of organizing facility operations. Since most of the regional-serving facilities in Long Beach are long-established and have adopted master plans for future development or are governed by Planned Development Ordinances, the improvement of their transition and expansion areas will be the focus of the City for their future.

Transitions. Land use transitions between large institutional facilities and their neighbors are often abrupt. In the Regional-Serving Facility PlaceType, special attention shall be paid to the edges both within and adjacent to the particular regional-serving facility. Incompatible land uses must be separated with site planning strategies and appropriate design treatments.

Access. Although many will arrive at regional-serving facilities by automobile, alternative forms of transportation must be provided. Employees, visitors and patrons, such as students of higher educational institutions, can expect focused public transit investments to serve regional public facilities. Facilities must accommodate transit services, pedestrian activity, automobile access and improved bicycle access, especially in relation to campus environments.

Parking. The Regional-Serving Facility PlaceType promotes employing state-of-the-art transportation demand management programs that include shared or consolidated parking facilities, employee shuttles, preferential parking for van pools, and other measures to prevent off-site spillover parking from regional public facilities. There should be a range of transportation modes to access these facilities for both visitors and daily users.

Kilroy Airport Center - office campus.

Downtown PlaceType

The Downtown PlaceType includes the heart of the City, where extensive development activity has taken place since the late 1990s (see Map LU-18). Downtown is the business office, government and tourism hub of Long Beach, and also hosts many of the City's historic and cultural landmarks, including the Drake Park/Willmore City Historic District. Moreover, downtown contains established urban residential neighborhoods such as the West End, the East Village and North Pine Avenue. Downtown is characterized by compact, mixed-use urban development; high vehicular, pedestrian and transit traffic; and diverse building sizes heights, ages, styles and uses.

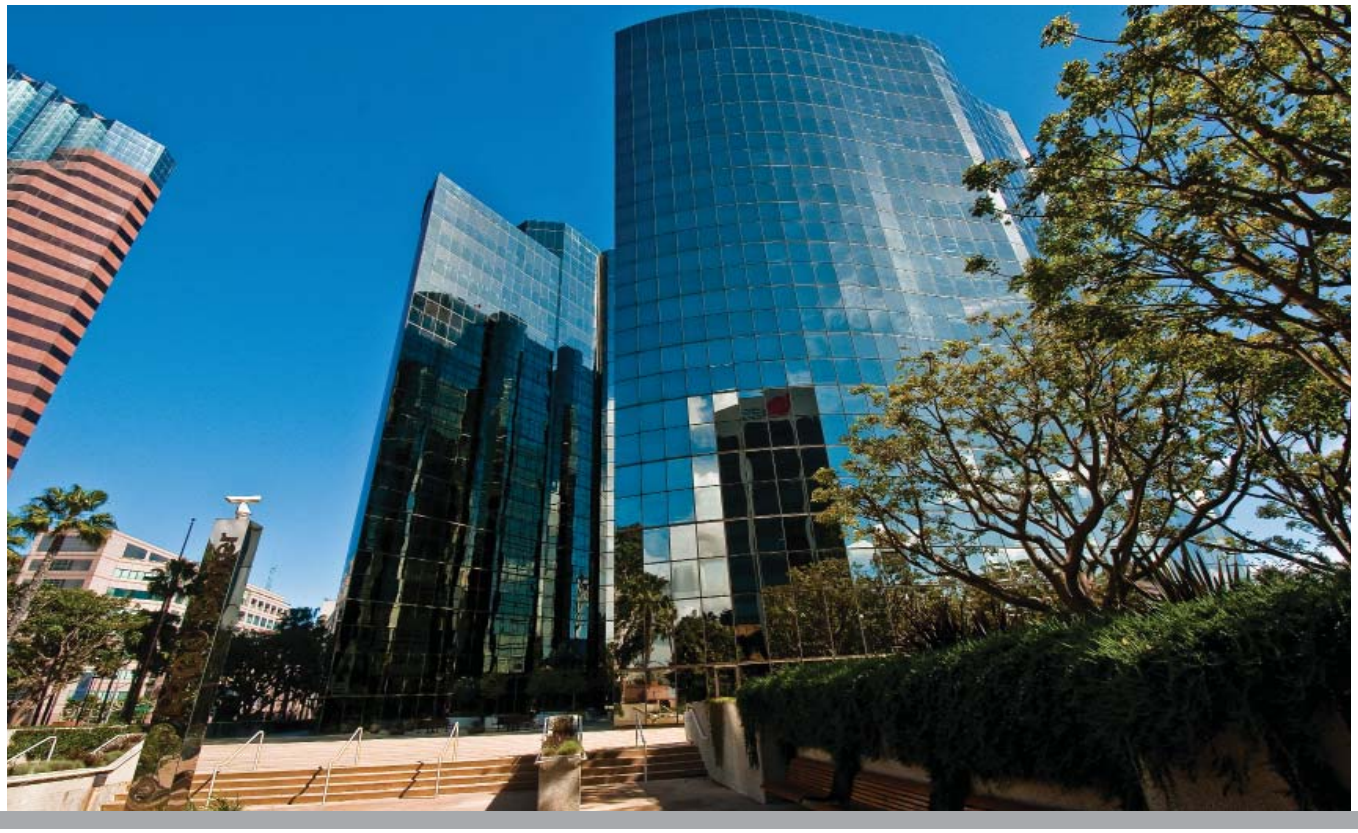
In January of 2012, after several years in the making, the City Council adopted a new Downtown Plan for Long Beach. This plan contains design and development standards covering the former Downtown Planned Development District known as PD-30. Thus, future uses, development intensities, heights and street walls, ground-floor retail, landscaping and more are regulated by this plan for the City's historic heart. This General Plan Land Use Element is consistent with the Downtown Plan and supports continued high-quality development within the very important City center.

Context. Downtown Long Beach's small geographic footprint, located on a bluff overlooking the Pacific Ocean also happens to be where the Los Angeles River and shipping activities at the Port of Long Beach meet the activities of the waterfront, beach and marinas. These conditions provide both challenges and opportunities that require solid planning and design guidance as the downtown matures.

As a magnet for investment, office and residential towers and civic institutions, downtown will always be planned for more development activity and intensity than the City's other neighborhoods. Because of the magnitude of financial investment and the desire to attract jobs and businesses, it is vital that Long Beach keep a focus on the downtown. The new Downtown Plan informs the Downtown PlaceType by defining the overarching vision for the area's future, along with the guiding principles, development and design standards and streetscape design guidelines.

Land Uses. A mix of land uses and housing types is encouraged in the Downtown PlaceType, with a focus on providing active ground-floor shops, restaurants and cafes. Specifically, the Downtown Plan governs land use

Downtown Long Beach office high-rise buildings.



Map LU-18
DOWNTOWN PLACETYPE

Legend

PlaceTypes

DT - Downtown

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

for the Downtown PlaceType with a special Downtown Neighborhood Overlay established to ensure that primarily residential areas are maintained, while allowing for the incorporation of neighborhood retail where desirable.

Development Patterns. The Downtown PlaceType primarily comprises small blocks and streets that provide a walkable framework for pedestrians. The street network also allows easy access by automobile. The Downtown Transit Gallery on First Street provides transfers between buses and the Metro Blue Line light rail train to Los Angeles. The Downtown Bicycle Station is also tied to this transit system via the Transit Gallery, allowing commuters to bring a bicycle on the train or leave it in bike station storage. Buildings in the Downtown PlaceType range from smaller-scale residential units in the outer areas (West End and East Village) to medium-scale and high-rise office and residential towers in the central core and along Ocean Boulevard.

The Downtown PlaceType promotes a highly-urbanized core featuring compact development composed of a mix of compatible uses, building types and styles. Density must be balanced with open space, and new developments must preserve light, air circulation, views and privacy.

Transitions. Given the small block sizes and mix of different uses, transitions between uses and developments are critically important in the Downtown PlaceType. Changes in height or building character, where allowed, should occur mid-block to promote balanced streetwalls where both sides of the street appear similar in height. Larger developments near smaller residential dwellings should step down appropriately to respect these neighbors, following the development standards and guidelines prescribed in the Downtown Plan.

Access. Downtown should be reinforced as an inter-modal transit hub, building on the existing transit systems to increase capacity and mode options. A distinct bicycle network with supportive facilities and a pedestrian-friendly walking experience allow for a significant concentration of visitor and resident activities. Pedestrian connections from the Downtown PlaceType to the downtown shoreline Waterfront PlaceType should be strengthened through additional pedestrian links, paseos and greenways. Wayfinding signage for pedestrians, bicycles and automobiles should also be upgraded.

High-rise residential uses along Ocean Boulevard.

A mix of uses along Long Beach Boulevard.

Long Beach Promenade.

First Street Transit Gallery.

Parking. Requirements for parking in the Downtown should be lower than elsewhere in the City and are specified in the Downtown Plan. Standards require parking structures to be well-designed and wrapped with active ground-floor uses. Underground garages are encouraged to minimize the visual impact of parking and eliminate the need for large, blocky and expansive parking structures at the pedestrian level.

Parklet seating areas.

Metro Blue Line light rail car and high-rise office towers.

Pedestrian-friendly streetscape.

Urban residential apartments.

Pedestrian amenities such as parklets for restaurants.

Los Angeles County Governor George Deukmejian Courthouse.

Waterfront PlaceType

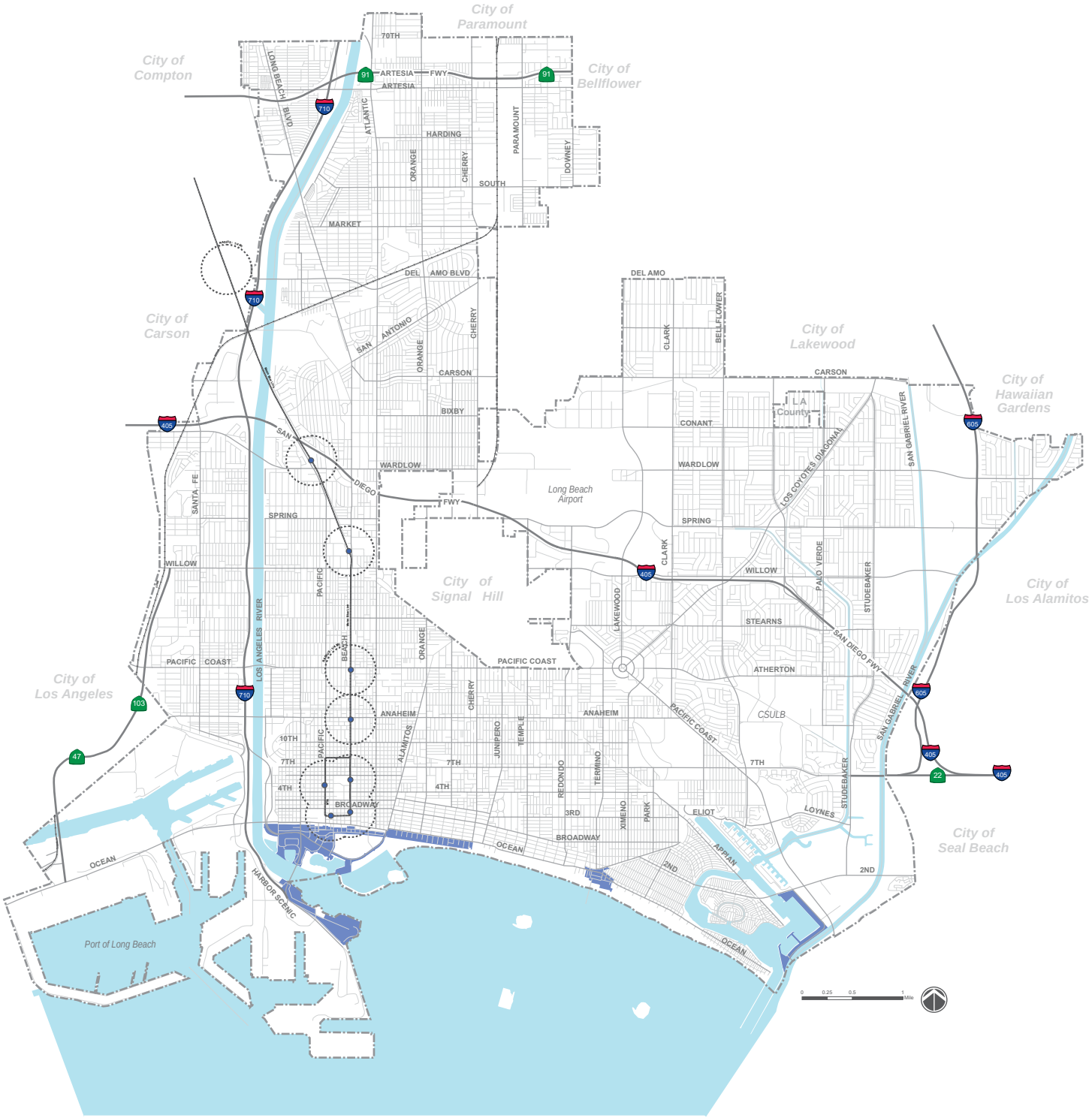
The Waterfront PlaceType is composed of a variety of unique places along the City's shoreline (see Map LU-19). Each of the Waterfront districts supports tourism by leveraging waterfront development and improving coastal access. The Downtown South Shore features the historic Queen Mary trans-Atlantic ship, hotels, a public park and boat launch, and a large cruise ship terminal. The Downtown Shoreline features a Catalina Island boat landing, office towers, mid-rise housing towers, movie theater, shops, restaurants, parks, the Long Beach Aquarium of the Pacific, entertainment venues and hotels, marinas, the Long Beach Performing Arts Center and the Convention Center and arena. The Alamitos Beach Waterfront PlaceType (on the south side of Ocean Boulevard) allows high-rise residential development to Tenth Place and four-story residential buildings to Cherry Avenue. The Belmont Pier and Pool Complex Waterfront PlaceType includes privately-held multi-family residential buildings, restaurants and shops, and the City-owned pier, plazas, swimming pools, beach parking lot and green spaces. And lastly, the Alamitos Bay Marina is home to an intensive concentration of recreational marine activities and associated commercial uses.

Similar to the Downtown PlaceType, each of these places has its own special development rules contained in six distinct Planned Development Districts. In addition, each of the Waterfront PlaceTypes (including the development regulations) is covered in detail in the Local Coastal Program Element of the General Plan. The development standards for the South Shore and Downtown Shoreline were updated most recently so that these places now reflect the types of development envisioned by these Planned Development ordinances. No immediate changes to the Land Use Element are anticipated for these two areas. Further, no changes are proposed to the development standards in place for the Alamitos Beach Waterfront PlaceType. This area is largely developed and offers very few remaining opportunities for infill residential development.

The Belmont Pier and Pool Complex Waterfront PlaceType has development standards which were written in 1980. Since that time, attempts have been made to improve the under-performing pier and pool complex. The Belmont Plaza Pool natatorium was closed to the public in January 2013 and demolished in February 2015 after studies found major seismic and structural deficiencies. Plans for a replacement pool facility on the same site are currently pending, and include a natatorium housing an indoor competition pool, a diving well, and spectator seating, and outdoor competition and recreational pools. Detached visitor-serving café and restroom buildings, an extensive passive park and landscape improvements are also in the plan. To further improve the pier and pool complex area, additional visitor-serving uses such as a boutique hotel and additional seaside living and dining opportunities should be explored. Innovative partnering and financing strategies

Downtown Shoreline with view of the Queen Mary.

Map LU-19
WATERFRONT PLACETYPE



Legend

PlaceTypes

WF - Waterfront

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

may need to be pursued to facilitate redevelopment of the pier. Thus, this Land Use Plan recommends that established regulations be reviewed and updated to reflect the type of development that will provide greater benefits to Long Beach and the affected property owners.

Context. The Waterfront PlaceType applies to three major waterfront activity areas: the Downtown Shoreline, Belmont Pier and Pool Complex and the Alamitos Bay Marina. Each of these areas is unique in its layout and audience, and each is regulated by a Planned Development District ordinance—akin to a specific plan but lacking the design guidance of a specific plan. Further, each of these Waterfront PlaceTypes is also included in the General Plan Local Coastal Program (LCP). The zoning and development standards applied to the Waterfront PlaceTypes have not been updated in a very long time (with the exception of the Downtown Shoreline Planned Development District Ordinance). Therefore, this Land Use Element provides specific recommendations for much-needed updates.

Pierpoint Landing Lighthouse.

Land Uses. Each waterfront area should include a unique mix of uses depending on its specific purpose and location. The Downtown Shoreline waterfront should include the greatest intensity, compactness and diversity of uses, including housing, offices, hotels, and tourism activities and attractions. Uses within the South Shore area include the Queen Mary, a cruise ship terminal, a public boat launch, a special events park, hotels and restaurants. Across the river mouth are: the Long Beach Aquarium of the Pacific, Shoreline Village, on Queensway Bay along with harbor attractions, restaurants, piers, a double-tiered pedestrian esplanade and children's play area around the harbor. Marina Green, Shoreline Park and Rainbow Lagoon park and additional open space are also here. The area also includes parking structures, hotels, mid-rise housing developments, office towers, historic buildings (including the Villa Riviera and other landmarks), retail shops and restaurants, entertainment venues (e.g., nightclubs, movie theater, comedy club, and a Ferris wheel), and the Long Beach Convention and Entertainment Center. Much of this area, formerly known as Shoreline Lagoon and Park, was redeveloped under the Queensway Bay Plan in the mid-1990s to include a new boat harbor (Rainbow Harbor) and a commercial area where the lagoon had been. Shoreline Village (previously called Fisherman's Village) has largely remained the same. However, the south side of Ocean Boulevard west of the Convention and Entertainment Center (in an area previously known as the Pike) was successfully transformed in the early 2000s to incorporate the uses described above. East of Alamitos Avenue on the south side of Ocean Boulevard, high-rise buildings are allowed up to Tenth Place; beyond that up to Cherry Avenue, only mid-rise housing is allowed. This is a long-established policy in the LCP which will continue to be respected.

Shoreline Village.

The Belmont Pier and Pool Complex area is governed by a Planned Development Ordinance which was adopted over thirty years ago. A new plan for the pier has more recently been adopted and some improvements have been made; however, further improvements to the pool complex and surrounding uses are needed. A new plan for this Waterfront PlaceType could enliven and improve the area to bring revenue to the City and provide improved recreational opportunities for visitors and residents alike. Future uses in the Belmont Pier and Pool Complex area should serve both groups and uphold the principles and policies of the California Coastal Act.

The Alamitos Bay Marina is located near the mouth of the San Gabriel River near the intersection of Pacific Coast Highway and Second Street. Uses in this area include marine-related commercial uses, a shipyard, yacht and sailing clubs, boat rentals, restaurants, public beaches and infrastructure that primarily serve small craft boats and nearly 2,000 slips. It is home to the Alamitos Bay Marine Fuel Dock and the Long Beach Marina Headquarters, which supports recreational marine activities in Long Beach. A rehabilitation plan for the Alamitos Bay Marina was approved by the City in 2009 that continues to implement the Alamitos Bay Master Plan. The rehabilitation plan calls for renovating and enhancing Marina recreational and boating facilities. At the very southern point of the Alamitos Bay Marina is Alamitos Bay Landing. This commercial center comprises of several restaurants, offices, retail, equipment and vehicle rental and services aimed towards the users of the marina. This Land Use Plan focuses on improving the Alamitos Bay Landing by increasing coastal access and adding recreation and visitor-serving uses. Potential improvements include adding new parking facilities, public spaces, viewing areas and seating along the waterfront, pedestrian and bicycle paths, and waterfront-friendly landscaping.

Development Patterns. Each of the waterfront areas within this PlaceType experienced much of their initial development during very different periods in time. For example, the Downtown Shoreline is composed of more contemporary tourist, retail, restaurant and entertainment-style buildings, streets and block patterns. The Belmont Pier and Pool Complex contains a mix of older multi-family residences, a grocery store, a motel and shops. In this area there are also newer beachfront condominiums and restaurants served by a public beach/pier and parking lot adjacent to the popular beachfront bike and pedestrian path. This area, with its significant foot traffic and compact scale and street pattern, has great potential to become a pedestrian-friendly destination. The Alamitos Bay Marina is distinguished for its wide arrange of services for

Rainbow Harbor Marina and Shoreline Aquatic Park.

recreational boating and marine facilities. Restaurant and retail businesses in this area have names and architecture that reinforce this particular identity, which should be preserved.

Transitions. In general, mixed uses and greater building intensity should be located nearest the center within this PlaceType, with housing and/or lower-scale buildings on the periphery. Waterfront PlaceType uses should be sensitively integrated with surrounding land uses, and this PlaceType should de-emphasize vehicular access and promote park-once solutions. Attractive gateway elements should be developed to invite visitors in to explore the unique offerings found in each of these Waterfront PlaceTypes.

Access. Today, each of these places is fairly auto-oriented. In the future, each area should be much more pedestrian-, bicycle-and transit-friendly. Currently the downtown is most successful in being pedestrian-, bike- and transit-friendly. Yet, better pedestrian pathways and shuttle services should be provided over the long term along the coast and up to the downtown proper. The compact Waterfront PlaceType at the Belmont Pier and Pool Complex offers some of the best opportunities for creating a highly walkable resident-and visitor-serving area along the coast. The Alamitos Bay Marina could be enhanced by the inclusion of the bike and pedestrian improvements along the waterfront area with greater access to Alamitos Bay Landing.

Parking. Cars are welcome in the visitor- and resident-serving Waterfront PlaceType. However, vehicular traffic and parking must be carefully controlled because these are intended to be also pedestrian-friendly places. District and shared-use parking have proven successful strategies where parking is constrained due to small, individual parcels. Any future parking structures will be required to be screened on the periphery of the development, have active ground-floor uses, or be designed as tucked parking within or under other building uses. These measures will help preserve the pedestrian environment. Sufficient shared and public parking should be provided as density increases over time. Bicycle racks and storage lockers, together with plug-in spaces for electric vehicles, will be provided in every parking structure in the Waterfront PlaceType.

Belmont Shore Pier.

Alamitos Bay Marina.

Citywide Goals, Strategies, and Policies

This Land Use Element identifies goals and policies along with PlaceType descriptions to guide the use of land and urban form. Citywide policies provide holistic and general guidance for the entire City, whereas neighborhood-specific policies provide a refined and specific direction for Long Beach's distinct residential areas. The goals, strategies and policies outlined in this section describe how the City will continue to pursue innovative land use practices aimed at maintaining the small town feel of neighborhoods while also capitalizing on big city attributes. As part of this endeavor, the City will accommodate new business opportunities and expand job growth, revitalize corridors, enhance established neighborhoods, create a smarter city, protect the environment and support sustainable planning practices.

The land use strategies and policies in this section are organized under the following goals:

1. Implement Sustainable Planning and Development Practices
2. Stimulate Continuous Economic Development and Job Growth
3. Accommodate Strategic Growth and Change.
4. Support Neighborhood Preservation and Enhancement
5. Diversify Housing Opportunities
6. Ensure a Fair and Equitable Land Use Plan
7. Provide Reliable Public Facilities and Infrastructure
8. Increase Access to, Amount of and Distribution of Green and Open Space
9. Preserve, Protect, Restore and Reconnect with Local Natural Resources

Goal No. 1: Implement Sustainable Planning and Development Practices

The City will guide development and infrastructure to be sustainable. This includes minimizing our impact on natural resources—especially wetlands, rivers, marinas, bays and the Pacific Ocean. New developments will be more compact to create walkable environments in downtown, along corridors, surrounding transit stations and throughout Long Beach. Emphasis will be placed on reducing greenhouse gas emissions through conservation practices, providing transportation alternatives and pursuing renewable energy sources. The City will pursue the following sustainable planning and development practices:

» Allow for orderly development and flexibility to grow.

» Provide more detailed plans that will lay the foundation for the areas of change.

» Fully integrate land use and mobility planning, and encourage all development to be more environmentally sustainable.

» Utilize sustainable approaches in public realm improvements, and integrate these approaches with new development.

» Promote compact development and higher density development along transit corridors, in neighborhood hubs and in areas that can support additional residential density, while ensuring adequate transitions to adjoining low-density neighborhoods.

» Encourage walkable and bicycle-friendly environments.

» Be proactive in mitigating the effects of climate change and reducing greenhouse gas emissions.

» Encourage zero waste practices.

STRATEGY No. 1: Support sustainable urban development patterns.

» LU Policy 1-1: Promote sustainable development patterns and development intensities that use land efficiently and accommodate and encourage walking.

» LU Policy 1-2: Support high-density residential, mixed-use and transit-oriented development within the downtown, along transit corridors, near transit stations and at neighborhood hubs.

» LU Policy 1-3: Require sustainable design strategies to be integrated into public and private development projects.

» LU Policy 1-4: Require electric vehicle charging stations to be installed in new commercial, industrial, institutional and multiple-family residential development projects. Require that all parking for single-unit and two-unit residential development projects be capable of supporting future electric vehicle supply equipment.

» LU Policy 1-5: Encourage resources and processes that support sustainable development for adaptive reuse projects, as well as appropriate infill projects.

» LU Policy 1-6: Require that new building construction incorporate solar panels, vegetated surface, high albedo surface and/or similar roof structures to reduce net energy usage and reduce the heat island effect.

» LU Policy 1-7: Encourage neighborhood-serving retail, employment and entertainment destinations in new mixed-use projects to create local, walkable daily trip destinations.

» LU Policy 1-8: Include and recognize the contribution of natural lands in the City's carbon inventory and climate actions. Require scientific analysis of carbon sequestration losses or gains with all land conversion proposals that impact or convert natural lands and wetlands.

» LU Policy 1-9: Correlate new land uses to the existing street system such that that existing street system, in combination with improvements focused on supporting alternative modes of travel, operates at an acceptable level of capacity. New rights-of-way essential to the accommodating all modes of travel will avoid significant social, neighborhood and environmental impacts by utilizing adjacent paved area (e.g. formerly parking or development). The conversion of open space, parkland, buffer areas adjacent to wetlands and rivers and streams for street improvements is discouraged.

» LU Policy 1-10: In addition to analyzing project and plan impacts on Levels of Service and Stop Delay, analyze Vehicle Miles Traveled consistent with the State's guidelines.

» LU Policy 1-11: Updates to the City's zoning map and zoning ordinance shall include a base density applied to each parcel, with additional land use flexibility tethered to additional public benefits and/or transfer within appropriate geographic, use, traffic trip and ownership limitations.

STRATEGY No. 2: Promote efficient management of energy resources to reduce greenhouse gas emissions and the impacts of climate change by employing a full range of feasible means to meet climate goals.

» LU Policy 2-1: Promote the establishment of local green energy generation projects along with the infrastructure to support such projects.

» LU Policy 2-2: Ensure that long-range planning processes consider impacts of sea level rise and propose mitigation measures.

Goal No. 2: Strengthen the City's Fiscal Health by Stimulating Continuous Economic Development and Job Growth

The City will continue to leverage its regional location and jobs base to make Long Beach a place where businesses want to locate. Priorities include creating jobs and promoting the City as a regional hub for commerce and education, which will help increase the jobs per household ratio to an appropriate level. Investments will expand the application of emerging technologies, attract modern green businesses and diversify employment opportunities. Opportunities will be pursued to expand creative and flexible building spaces in a way that incubates new local businesses. This Land Use Plan will be implemented in a manner that allows businesses to successfully operate in and support local neighborhoods. Long Beach will continue to lead as a regional destination for small and large businesses, airport and port facilities, utilities, public administration, healthcare and educational campuses, manufacturing, transportation and logistics, and professional and information services.

STRATEGY No. 3: Maintain a strong, diversified economic base that creates jobs and attracts employers.

» LU Policy 3-1: Implement land use regulations and economic development strategies that will help diversify the local economy and expand job growth. Accommodate a mix of industries in Long Beach, including high technology, telecommunications, aerospace, green technology, renewable energy, healthcare, higher education, manufacturing, port and shipping, professional services, restaurants, entertainment and the film industry.

» LU Policy 3-2: Collaborate with the Long Beach Unified School District, colleges and universities, businesses and associations to strengthen the competitive advantage of businesses located in Long Beach.

» LU Policy 3-3: Promote the Neo-Industrial PlaceType to nurture creative class businesses and artists, including clean light industrial, artist galleries, studios and limited live/work units.

» LU Policy 3-4: Promote and attract a mix of commercial and industrial uses by emphasizing the flexibility of the PlaceTypes designations.

» LU Policy 3-5: Facilitate development near the Queen Mary that is consistent with the guidelines approved by the City Council at the conclusion of the Queen Mary Land Development Task Force.

» LU Policy 3-6: Foster home-based and incubator businesses.

» LU Policy 3-7: Increase coordination between the City's Development Services Department and Economic Development Department.

STRATEGY No. 4: Attract and invest in green and innovative industries to expand creative employment opportunities.

» LU Policy 4-1: Provide a Land Use Plan that allows a place for green energy development and green businesses.

» LU Policy 4-2: Promote the transition of some heavy industrial and manufacturing sites to creative green and sustainable industries.

STRATEGY No. 5: Expand the Long Beach promise to include not only access to higher education, but to appropriate housing and employment opportunities needed to enjoy the benefits of higher education.

» LU Policy 5-1: Require safe, attractive and environmentally sustainable design, construction and operation of all buildings, landscapes and parking facilities in employment and educational centers.

» LU Policy 5-2: Connect employment and higher education centers to other activity centers and adjacent neighborhoods via walking, biking and transit routes.

» LU Policy 5-3: Work with students, faculty and alumni from California State University Long Beach and other higher educational institutions to identify and attract emerging employment sectors of interest to local students.

» LU Policy 5-4: Require employment and higher education centers to transition to walkable and bikeable campus environments with wayfinding signage, integrated open spaces and easy accessibility via roadways, transit and bicycle routes.

» LU Policy 5-5: Provide excellent transit connections to California State University, Long Beach, City colleges and all major employment and educational campuses.

» LU Policy 5-6: Support campus plans that promote innovative and technically sophisticated business and learning environments.

» LU Policy 5-7: Encourage collaboration among the City's major employment sectors (e.g., medical, professional, government) schools and City colleges, California State University, Long Beach, and other institutions of higher education to improve competitiveness of the work force and desirability of doing business in the City.

» LU Policy 5-8: Support spin-off and research ventures that will add to the City's revenue stream from Long Beach area colleges and universities.

STRATEGY No. 6: Maintain a full range of City services for the community that is consistent with the revenue available to sustain those services.

» LU Policy 6-1: Encourage a mix of land uses that is diverse, innovative, competitive, entrepreneurial, local and sustainable, which thereby promotes economic development, increases City revenues, expands job growth and increases value, access and usability for existing neighborhoods and communities.

» LU Policy 6-2: Operate, maintain and manage the City's services, facilities, utilities and infrastructure using funding sources that are financially sustainable over the long term.

» LU Policy 6-3: Pursue a variety of funding approaches, including grants, impact fees, transportation funds and other programs to fund City programs, services and capital investments.

» LU Policy 6-4: Utilize smart city approaches to effectively and efficiently track and manage the delivery of services and reduce the fiscal footprint of providing such services.

» LU Policy 6-5: Develop and adhere to City fiscal policy to follow prudent standards with strong financial reserves and to guide the City through the budget decision-making process and prioritization of capital improvements.

» LU Policy 6-6: Continue capital improvement planning and prioritization of infrastructure investments to ensure that funding resources are allocated to the City's most critical needs.

» LU Policy 6-7: Maintain and implement the Economic Development Blueprint to identify priorities, support prosperity and improve long-term fiscal competitiveness.

» LU Policy 6-8: Consider fiscal health and fiscal implications in land use decisions. Preserve and enhance the City's ability to sustainably provide services to the City's residents, businesses and visitors.

» LU Policy 6-9: Encourage the redevelopment of parcels with poor land utilization such as single-use commercial structures on parcels over 5,000 square feet.

» LU Policy 6-10: Discourage fiscally draining land uses such as public storage, vacant lots and outdoor storage.

» LU Policy 6-11: Pursue new developments and businesses that add to the City's economic base, particularly those that generate sales tax and property tax increment revenue.

» LU Policy 6-12: Support growth of clean industrial businesses that contribute both high-paying jobs and point-of-sales revenue.

» LU Policy 6-13: Expand lodging choices in the City by attracting and retaining high-quality facilities desired by visitors to our community.

» LU Policy 6-14: Work with the Long Beach Convention & Visitors Bureau and other community organizations to promote increased tourism.

Goal No. 3: Accommodate Strategic Growth and Change

Long Beach continues to evolve. The City will accommodate development growth within strategic locations while preserving established neighborhoods. Specific areas identified for growth are in the downtown, around regional-serving facilities, along major corridors and in transit-oriented development areas. Focusing on infill will allow new development to efficiently utilize existing land resources and infrastructure, promoting steady and sustainable growth in transit-accessible areas. The City will create attractive, distinct and sustainable commercial, education and employment centers and corridors.

Major Areas of Change

This Land Use Plan focuses on making several strategic adjustments intended to strengthen economic development and allow focused development opportunities, while supporting new mobility and sustainability objectives.

Map LU-20 identifies the eight major areas of change that are the focus of the land use concept:

1. Create, restore and preserve more open space.
2. Convert targeted industrial edges and districts to Neo-Industrial uses.
3. Promote regional-serving uses.
4. Convert some industrial uses to commercial and regional-serving uses.
5. Create new transit-oriented development.
6. Continue Downtown development.
7. Promote infill and redevelopment to support transit.
8. Revitalize the Belmont Pier Complex and Alamitos Bay to highest and best use.

Together these areas of change encompass about 13 percent of the land area (4,180 acres) in the City. Not all of this land will quickly "turn over" or convert consistent with the vision of this Land Use Plan. However, substantial changes are planned in these areas over the next 20 to 30 years.

1. Create, Restore and Preserve Open Space. The City recognizes the need for a wide variety of parks and open spaces within certain neighborhoods, particularly in the

Map LU-20
Major Areas of Change

Areas of Change Description

1 More Open Space
2 Convert to Neo-Industrial Uses
3 Promote Regional-Serving Uses
4 Transition from Industrial to Commercial Uses
5 Promote Transit-Oriented Development Uses
6 Continue Downtown Development
7 Promote Infill and Redevelopment to Support Transit
8 Redevelop to Highest and Best Use

Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

north, central and western portions of Long Beach. This Land Use Plan focuses on creating and restoring open spaces, with priority in underserved areas.

2. Convert Industrial Edges to Neo-Industrial Uses. Industrial uses remain important in Long Beach, but economic trends indicate that the local economy is shifting toward knowledge-based and service-based industries. Professional services employment is rapidly growing, along with a slow emergence of high technology and creative companies known for introducing innovative approaches and products. Traditional manufacturing industries are being transformed as large-scale plants are diminishing or being phased out and smaller local-serving manufacturers fill the void.

The City has established the Neo-Industrial PlaceType to help transition outdated and underutilized manufacturing and industrial sites to higher-value, better employment opportunities. For added flexibility, the Neo-Industrial PlaceType allows some live/work opportunities for artists, craftspeople and other creative entrepreneurs. This PlaceType also functions as a buffer between heavier industrial enterprises and residential neighborhoods.

3. Promote Regional-Serving Uses. Much of the land in Long Beach is devoted to trade, utilities, transportation, education and medical services. The City is home to a number of significant regional-serving uses: the Port of Long Beach; Long Beach Airport, California State University at Long Beach; the Veterans Administration Medical Center, Long Beach Memorial Medical Center; Long Beach City College; the business parks around the airport and the utility plants in southeast Long Beach. These facilities generate high-quality jobs that serve regional and larger audiences, while creating additional spin-off employment opportunities. The City benefits through the opportunities for education and training that result in employment in healthcare, trade, transportation and professional services. Thus, the Regional-Serving Facility PlaceType accommodates future development of these facilities to promote their continued success in generating exceptional employment opportunities.

» **SEASP**. Located in the Regional-Serving Facility and Open Space PlaceType is the Southeast Area Specific Plan (SEASP). Formerly, the Southeast Area Development and Improvement Plan (SEADIP) was established in the early 1970s as the first planned development district in Long Beach. Certain SEASP areas—particularly large commercial and hospitality sites along Pacific Coast Highway—are in need of revitalization. These centers were initially designed around the automobile with extensive surface parking lots and low-rise buildings. There is also a lack of pedestrian accommodations and connectivity between uses along Pacific Coast Highway and the waterfront areas. The City adopted SEASP in 2017 with a new vision for the area that focuses on pedestrian and vehicular flow improvements, creating a regional destination and gateway for the City, restoring the surrounding wetland areas and improving public access to the marina and waterfront areas.

» **Temple/Redondo Avenue.** The area between Temple Avenue and Redondo Avenue, north and south of the I-405 freeway, is designated for regional-serving commercial and office uses. The nearby freeway and airport offer special employment and trade opportunities, as well as excellent regional access.

4. Convert Select Industrial Uses to Commercial Uses. Two areas in the central area of Long Beach formally designated for industrial development offer unique opportunities to be reinvented as commercial designations: properties between Cherry Avenue and the Union Pacific Railroad.

5. Transit-Oriented Development. To maximize the Metro Blue Line regional light rail service and build on future transit services, the City is allowing greater mixed-use development capacity around transit stations. The Transit-Oriented Development PlaceType allows for an increase in residential density and commercial intensity around each Blue Line station. This PlaceType may be expanded to serve future transit systems. The approach aims to increase the concentration of residents—as well as create a more pedestrian-friendly environment—around each station to augment ridership and provide a viable transportation alternative to the automobile. Design and regulation guidance outlined in both the Land Use and Urban Design elements promotes the type of housing, commercial and office development that will best complement connectivity and access to transit stations.

6. Continue Downtown Development. Historically, Long Beach has struggled to maintain the Downtown's

competitive advantage in the face of increased suburban retail and commercial competition. Fortunately, Downtown Long Beach has developed a strong foundation composed of business, tourism, commercial, entertainment, residential and civic uses, while still being able to serve surrounding neighborhoods. The City will continue to pay close attention to maintaining a strong urban core attractive to residents, businesses and tourists.

Recognizing the importance of the Downtown, this Land Use Plan establishes the Downtown PlaceType designation to support the principles and concepts of the Downtown Plan. The Downtown Plan continues to accommodate high-quality residential, entertainment and commercial development that is well integrated with the Downtown's urban design, waterfront and transit facilities.

7. Promote Appropriate Infill Development. This Land Use Plan promotes appropriate infill development, particularly along corridors and centers that have established transit facilities. Long Beach will encourage development of vacant or underutilized land located in built-up areas. New infill development should be carefully planned to minimize impacts and to complement surrounding development. Appropriate infrastructure and supporting services must be adequate or in place to serve new infill development without sacrificing services to the existing population.

The Multi-Family, Neighborhood-Serving Center and Transit-Oriented Development PlaceTypes provide opportunities for infill development in strategic areas, with policies aimed at protecting established low-density neighborhoods. The Mobility Element promotes improved transit services where it will complement infill development. A key objective is to provide the best transit service in several areas that stand out as having real potential for improvements:

» **Cherry Avenue Corridor.** The segment of Cherry Avenue from Anaheim Street to Pacific Coast Highway offers a unique opportunity to improve public transit access to three major transit routes while also accommodating infill development. Infill is envisioned to include appropriate Multi-Family housing, as well as commercial development over the long term.

» **Redondo Avenue Corridor.** This corridor is also identified as appropriate for infill development. This important north-south connector has long suffered from inconsistent development patterns that undermine its critical transit function. Properties fronting the corridor have insufficient parcel depth to allow appropriate infill to occur. Thus, the Land Use Plan extends the Transit-Oriented Development PlaceType one block deep to accommodate appropriate infill development, while providing protective transition measures to adjoining low-density neighbors.

» **Pacific Coast Highway Corridor.** Pacific Coast Highway around the Traffic Circle and further west between Cherry Avenue and Atlantic Avenue provides opportunities for multi-family housing. Over time, the physical environment will transition to integrate walking, biking and transit facilities connected to the California State University, Long Beach campus and the Veterans Administration Medical Center facility.

8. Revitalize the Belmont Pier Complex and Alamitos Bay Landing. The Waterfront PlaceType addresses Long Beach's coastal presence. The Downtown waterfront has been revitalized with a new harbor, pedestrian boardwalk, aquarium, restaurants, mid- and high-rise residential buildings and new entertainment venues. Attention should now focus on waterfront areas in the southeastern portion of the City, including:

» **Belmont Pier Complex.** The Belmont Pier Complex needs a major refurbishment and re-evaluation of how its public areas and facilities should function. Efforts will focus on establishing a more attractive, accessible and pedestrian-friendly environment while creating synergy and connectivity with the surrounding residential neighbors. Additional focus will include improving the environment and coastal access while increasing recreational and visitor-serving amenities.

» **Alamitos Bay Landing.** The Alamitos Bay Landing area, located at the terminus of Marina Drive along the San Gabriel River and Alamitos Bay, has gone decades without major reinvestment. The shopping center and restaurants are outdated and not well integrated with the Alamitos Bay setting. Envisioned improvements include new parking facilities, more buildings, public spaces, viewing areas and seating along the waterfront, pedestrian and bicycle paths and waterfront-friendly

landscaping. Increasing coastal access, recreation and visitor-serving uses would help make Alamitos Bay Landing a much more enjoyable and successful place.

STRATEGY No. 7: Implement the major areas of change identified in this Land Use Plan (Map LU-20).

» LU Policy 7-1: Continue to accommodate regional-serving facilities, new growth and infrastructure expansion through the development and update of master plans.

» LU Policy 7-2: Convert outdated and underutilized manufacturing and industrial sites to Neo-Industrial uses, particularly those adjacent to residential areas.

» LU Policy 7-3: Allow heavy industry uses, as well as oil and gas facilities, to transition to green industry where feasible and desired.

» LU Policy 7-4: Encourage degraded and abandoned buildings and properties to transition to more productive uses through adaptive reuse or new development.

» LU Policy 7-5: Provide incentives for outdated and underperforming industrial areas to transition to commercial uses consistent with the PlaceTypes Map.

» LU Policy 7-6: Promote transit-oriented development around passenger rail stations and along major transit corridors.

» LU Policy 7-7: Continue to develop the Downtown into a city center that provides compact development, accommodates new growth, creates a walkable urban environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.

» LU Policy 7-8: Ensure infill development is compatible with surrounding established and planned uses.

» LU Policy 7-9: Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.

» LU Policy 7-10: Maintain consistency between the Land Use Element PlaceTypes and by the updated Zoning Districts.

» LU Policy 7-11: Support infill and transit-oriented development projects by utilizing available tools, such as public-private partnerships and assistance with land assembly and consolidation.

» LU Policy 7-12: Develop and implement a plan for SEASP that establishes the area as an important gateway and builds on residential neighborhoods that are complemented by businesses and commercial services, protects wetlands and local coastal habitat and creates attractive streetscapes with buildings designed at appropriate scale and form.

STRATEGY No 8: Enhance and improve the waterfront areas.

» LU Policy 8-1: Work with the community to reinvigorate the area around the Belmont Pool complex, Belmont Veterans Memorial Pier and vicinity. Provide new connectivity to adjoining neighborhoods and increase visitor-serving amenities.

» LU Policy 8-2: Improve Alamitos Bay Landing to create a more enjoyable and successful place with additional coastal access, recreation and visitor-serving uses and design improvements to create a more pedestrian-friendly and attractive area.

» LU Policy 8-3: Minimize potential land use conflicts when changing waterfront areas so as not compromise military readiness.

Goal No. 4: Support Neighborhood Preservation and Enhancement

Long Beach is fundamentally a city of neighborhoods. This Land Use Plan provides the framework for protecting and enhancing low-density residential neighborhoods. These neighborhoods will be diverse, safe, healthy and sustainable places, with a mix of residential building types and connected streets that facilitate walking, biking and transit. From our historic and founding neighborhoods to more contemporary ones, Long Beach endeavors to preserve and enhance our neighborhoods for generations to come.

The City will strive to provide amenities and enhance facilities to support the single-family Neighborhoods and Multi-Family–Low and Moderate PlaceTypes. Proposed improvements include establishing commercial and retail uses on the periphery of neighborhoods or in commercial hubs to better serve residents, integrating public facilities and open spaces into neighborhoods, providing convenient transit connections and walkable environments, and incorporating a variety of design enhancements and sustainable practices. The City will employ a range of land use compatibility strategies to ease transitions between new development and established lower-density residential buildings.

STRATEGY No. 9: Protect and enhance established neighborhoods.

» LU Policy 9-1: Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on residential living environments.

» LU Policy 9-2: Enhance and improve neighborhoods through maintenance strategies and code enforcement.

STRATEGY No. 10: Create complete neighborhoods with identifiable centers and a full range of supporting neighborhood-serving uses to meet the daily needs of residents.

» LU Policy 10-1: Ensure neighborhoods contain a variety of functional attributes that contribute to residents' day-to-day living, including schools, parks and commercial and public spaces.

» LU Policy 10-2: Complete neighborhoods by allowing low-intensity commercial uses to locate along neighborhood edges, in transition areas and at key intersections.

» LU Policy 10-3: Plan for and accommodate neighborhood-serving goods and services, learning facilities, public amenities and transit stops within walking distance of most residences.

» LU Policy 10-4: Enhance neighborhoods and connect housing to commercial uses to provide residents with an active choice to walk or bike within their local neighborhoods.

» LU Policy 10-5: Broaden retail, entertainment and restaurant business opportunities, as appropriate, to meet the needs of the college community, including students, faculty, administration and visitors.

» LU Policy 10-6: Consider the needs of teens and youth in developing future retail, dining and entertainment venues throughout the City.

» LU Policy 10-7: Utilize development incentives to attract full-service grocery stores to all communities and encourage stores to sell fresh, healthy foods in underserved areas.

» LU Policy 10-8: Incentivize the inclusion of public amenities, community facilities, full-service grocery stores, child care and accessible open space areas in large mixed-use projects.

STRATEGY No. 11: Create healthy and sustainable neighborhoods.

» LU Policy 11-1: Require that land use plans, policies and regulations promote health and wellness and reduce barriers to healthy living.

» LU Policy 11-2: Provide for a wide variety of creative, affordable, sustainable land use solutions to help resolve air, soil and water pollution, energy consumption and resource depletion issues.

» LU Policy 11-3: Support land use and policy decisions that promote local urban agriculture, community gardens and local food production throughout the city.

» LU Policy 11-4: Reduce disproportionate concentrations of unhealthy food sources within neighborhoods, especially near schools and sensitive uses.

» LU Policy 11-5: Ensure neighborhoods are accessible to open spaces, parks, trails and recreational programs that encourage physical activity and walkability.

» LU Policy 11-6: Achieve health equity, eliminate disparities and improve the health of residents throughout the City.

» LU Policy 11-7: Diminish the impact of drive-through facilities on the pedestrian environment.

Goal No. 5: Diversify Housing Opportunities

Long Beach will offer an increasingly diverse housing stock. Policies and practices will continue to promote and expand affordable housing options by accommodating a range of housing types and by providing opportunity for an increased supply of housing through focused density throughout the City. Policies provide for an equitable distribution of housing types for all income groups throughout the City, thus avoiding concentrations of below-market-rate housing in underserved and low-income neighborhoods.

The City's innovative Downtown Plan and PlaceTypes designations will facilitate the redevelopment of underutilized properties to create vibrant, walkable neighborhoods, centers and corridors, as well as preserve and enhance established and stable neighborhoods. New housing along corridors in or near activity centers is an integral part of the vision for Long Beach. A balance of housing opportunities for both affordable and market-rate housing is essential to meet this goal.

The Multi-Family, Neighborhood Center, Transit-Oriented Development, Neo-Industrial, Downtown and Waterfront PlaceTypes all allow a range of housing types at varying densities, including single-family homes, duplexes, triplexes, garden apartments, condominiums, mixed use, live/work lofts and mid- and high-rise residential towers.

The following strategies and policies address the City's housing needs related to land use and complement strategies in the City's Housing Element.

STRATEGY No. 12: Diversify Long Beach's housing stock.

» LU Policy 12-1: Allow a variety of housing types in new residential developments with the goal of establishing new opportunities for persons of varied income ranges, ages, lifestyles and family needs.

» LU Policy 12-2: Encourage the provision of housing opportunities, services, and amenities for all income levels, age groups, and household types, with opportunities to age in place.

» LU Policy 12-3: Encourage universal design of housing products and environments, making them usable by a wide range of people with different physical and mental abilities.

» LU Policy 12-4: Allow new high-density residential growth to occur within Multi-Family neighborhoods in a manner that is context sensitive and compatible to surrounding uses and buildings and that provides a range of housing types and options that meets the needs of Long Beach residents.

» LU Policy 12-5: Encourage major employers and higher education centers to participate in and contribute to planned housing development activities near their facilities.

» LU Policy 12-6: Establish clear rules and locations for special housing types, such as congregate care, assisted living, senior housing, student housing, housing for temporary workers and housing with supportive services.

» LU Policy 12-7: Work with students, faculty and alumni from California State University, Long Beach and other higher educational institutions to encourage the development of housing to meet student housing needs and housing needs of recent graduates.

STRATEGY No. 13: Facilitate housing type distribution.

» LU Policy 13-1: Promote an equitable distribution of housing types for all income and various cultural groups throughout the City; avoid creating concentrations of below-market-rate housing in underserved and low-income neighborhoods.

» LU Policy 13-2: Provide new housing opportunities in neighborhood-serving centers and corridors, within transit-oriented development areas and downtown.

» LU Policy 13-3: Provide more opportunities for college student housing in the east Traffic Circle neighborhood.

Goal No. 6: Ensure a Fair and Equitable Land Use Plan

Recognizing Long Beach's large and incredibly diverse population, this Land Use Plan promotes the fair and equitable distribution of land resources for employment, housing, education, recreation, mobility, commercial goods and public services for all residents, regardless of their ethnic or economic status. The Plan introduces policies aimed at protecting neighborhood health by promoting environmental, social and economic justice. Providing transparent planning processes with robust community participation also contributes to fair and equitable decision making.

STRATEGY No. 14: Promote the equitable distribution of services, amenities and investments throughout the City.

» LU Policy 14-1: Remedy existing deficiencies in blighted and underserved neighborhoods by providing public facilities, amenities, improvements and services equitably throughout the City.

» LU Policy 14-2: Promote land use policies and economic development strategies that embraces the diverse population of Long Beach.

» LU Policy 14-3: Avoid concentrating undesirable uses, service facilities and infrastructure projects in any manner that results in an inequitable environmental burden on low-income or minority neighborhoods.

» LU Policy 14-4: Establish livable communities across all neighborhoods that encourage walking, bicycling, using public transit and exercising outdoors, and that provide for economic and social opportunities for all community members.

» LU Policy 14-5: Work to comprehensively improve residential neighborhoods with improvements that promote health and prosperity.

» LU Policy 14-6: Promote universal design in public and private development to ensure accessibility for people of all abilities.

» LU Policy 14-7: Directly address Environmental Justice through programs and investments that reduce compound health risks within disadvantaged communities. Evaluate new land uses in a manner that is conscious of the cumulative impacts of pollutants and history of pollutant burden and public under investment in disadvantaged communities.

» LU Policy 14-8: Prioritize investments in disadvantaged communities that increase access to and availability of healthy food choices. Recognize the role of food deserts and unhealthy food in community health, and seek to restore balance and a variety of food choices, including full-service grocers, markets and farmers markets across all communities.

STRATEGY No. 15: Foster community outreach and engagement in planning City projects and programs.

» LU Policy 15-1: Inform and involve residents and facilitate neighborhood participation in implementing development and infrastructure projects and other planning programs or tasks.

» LU Policy 15-2: Foster an environment of trust, fairness and equality that supports individuals of diverse ethnic, cultural, religious and socio-economic backgrounds in planning City projects and programs.

» LU Policy 15-3: Consult with California Native American tribes early in the planning process to ensure their concerns are appropriately reflected in planning initiatives and projects.

» LU Policy 15-4: Work with the Native American community to identify ways of incorporating, appreciating and highlighting Native American history and culture in public art, museums, events and where applicable, development projects.

STRATEGY No. 16: Prevent and reduce disproportionate environmental burdens affecting low-income and minority populations.

» LU Policy 16-1: Identify areas and populations of the City that are exposed to unsafe levels of environmental pollutants.

» LU Policy 16-2: Improve the environmental conditions of low-income and minority populations experiencing

disproportionate environmental burdens by improving the physical conditions, safety, health, livability and prosperity of their neighborhoods.

» LU Policy 16-3: Develop public health equity and environmental protection programs that promote equity and that provide for the fair treatment of all Long Beach residents regardless of gender, sexual orientation, race, age, culture, religious beliefs, income and geographic location.

» LU Policy 16-4: Continue to work with the State, the Ports of Long Beach and Los Angeles, and other agencies and organizations to improve air quality around the ports and reduce vessel, truck, rail and other equipment emissions from port operations.

» LU Policy 16-5: Continue to be an advocate for neighborhoods adversely affected by operations at the ports, Harbor Area refineries, industrial uses, regional-serving facilities and large transportation projects to ensure a healthy environment, including quality affordable housing and community revitalization, while minimizing displacement of residents.

» LU Policy 16-6: Work with regional agencies, residents and businesses to preserve established homes, businesses and open spaces. Limit the exposure of residents and employees to toxic pollutants and vehicle noise. Minimize traffic issues impacting residential neighborhoods resulting from freeway expansion and other similar large-scale projects.

» LU Policy 16-7: Address Environmental Justice through public infrastructure investments in disadvantaged communities. These investments should address compound and unique health risks by reducing and limiting air pollutant exposure, providing health care infrastructure, using clean and renewable energy where available and improving active living and transportation options, as well as access to safe recreation, food and housing options.

» LU Policy 16-8: Require an acoustical analysis prior to project approval for projects subject to CEQA review, for all noise sensitive projects located in an area with noise levels greater than 60 dBA CNEL. All new residential land uses shall be designed to maintain a standard of 45 dBA CNEL or less in building interiors, consistent with the General Plan. Noise reduction measures to achieve this noise level could include, but are not limited to, forced air ventilation so that windows can remain closed and/or upgraded wall and window assemblies.

» LU Policy 16-9: The Los Angeles County Metropolitan Transportation Authority (Metro) shall be notified of any planned development or construction activities on properties that are within 100 feet of Metro right-of-way (ROW). Metro must be provided the opportunity early in the development process to review plans and comment, if necessary, to ensure that the project does not impact the safe operation of Metro transit service and/or compromise Metro infrastructure. As the project design advances, Metro may review construction drawings and work plans for potential impacts to the Metro system and to ensure safe operation of cranes, overhead loads, excavation, drainage, worker safety, and other construction activities. Projects immediately adjacent to Metro ROW may be required to include a setback from the Metro property line and to accommodate construction and maintenance activities on private property. Developers should not assume that Metro will grant a right-of-entry permit for construction or maintenance activities on Metro property. For this reason, Metro recommends a minimum five (5) foot setback from the adjacent Metro property line. At the City's discretion and Metro's request, a noise easement may be required to deed Metro the right to cause in said easement noise, vibrations and other effects that may be caused by the operation of transit vehicles.

» LU Policy 16-10: Locate schools and other sensitive receptors at least 500 feet away from freeways when feasible.

» LU Policy 16-11: Work with residents to seek out proactive, forward-looking strategies not only to clean up but also protect neighborhoods already overburdened by adverse environmental conditions.

» LU Policy 16-12: Identify planning and policy solutions to address problem motels throughout the City, particularly over-concentrated with motels and along human trafficking corridors.

» LU Policy 16-13: Locate sensitive land uses (e.g., residences, schools, and daycare centers) to avoid incompatibilities with recommended buffer distances identified in the most current version of the CARB Air Quality and Land Use Handbook: A Community Health Perspective (CARB Handbook). Sensitive land uses that are within the recommended buffer distances listed in the CARB Handbook shall provide enhanced filtration units or submit a Health Risk Assessment (HRA) to the City. If the HRA shows that the project would exceed the applicable thresholds, mitigation measures capable of reducing potential impacts to an acceptable level must be identified and approved by the City.

» LU Policy 16-14: When residential or other sensitive land uses are proposed within proximity to freeways or the Port, use the discretionary review process to impose site plan and design features aimed at minimizing exposure to environmental pollution. For example, locate balconies, outdoor amenity spaces, and when possible occupied portions of buildings as far from the pollution source as a particular site will allow, and require the planting of vegetation and landscape buffering as appropriate.

» LU Policy 16-15: Encourage the design of warehouse and distribution center check-in points that minimize queuing outside of the facility. The design shall also locate truck traffic within the site away from the property line(s) closest to its residential or sensitive receptor neighbors.

Goal No. 7: Provide Reliable Public Facilities and Infrastructure to Encourage Investment

Long Beach's infrastructure and public facilities will be functional and economically sustainable. Infrastructure will be expanded and maintained to serve new development; established neighborhoods, commercial and industrial areas; and regional-serving facilities at a high level of service. Priority for improvements will be given to remedy neighborhoods with existing deficiencies. Strategic investments will be made to infrastructure systems communication networks in all facets of City government to incorporate innovative technology aimed at creating a smarter city.

STRATEGY No. 17: Improve public infrastructure to serve new development, established neighborhoods, commercial centers, industry and regional-serving facilities.

» LU Policy 17-1: Coordinate land use development and infrastructure investment.

» LU Policy 17-2: Maintain adequate and sustainable infrastructure systems to protect the health and safety of all Long Beach residents, businesses, institutions and regional-serving facilities.

» LU Policy 17-3: Prioritize improvements in underserved neighborhoods to remedy deficiencies in infrastructure, public facilities and services.

» LU Policy 17-4: Continue to make improvements that advance technology and innovation to enhance City services, promote greater civic engagement and improve efficiencies.

» LU Policy 17-5: Serve a wide range of community needs by providing increased access to community uses at schools (i.e., health clinics, counseling centers, recreational and other social services) outside of school hours, starting in neighborhoods with lack of sufficient public facilities, infrastructure and services.

Goal No. 8: Increase Access to, Amount of and Distribution of Green and Open Space

Long Beach will create additional urban open spaces, quality greenscapes, clean beaches and water bodies, and natural preserves and parklands. The City will expand access to quality natural and recreational lands. Focused efforts will transform the Los Angeles and San Gabriel Rivers to healthier, multi-functional open spaces that are accessible to adjoining neighborhoods. The City will transform underutilized and marginalized open spaces, including designating off-shore oil islands for conversion to future recreational open spaces. Increased urban green space recreation areas, together with interconnected wildlife habitat and open space areas, will be needed to successfully balance population growth within a sustainable urban environment. This Land Use Element will complement the Open Space and Recreation Element.

Long Beach residents have made it clear that they want to see more quality open spaces within neighborhoods, especially in the north, west and central areas. Programming of these neighborhood open spaces should not be limited to active recreation, but should also include natural open space areas and wildlife habitats. Progress has been made in acquiring and improving significant open space acreage for parks and wetlands along the Los Angeles River. Likewise, a conservancy organization is acquiring the degraded (but restorable) Los Cerritos Wetlands at the mouth of the San Gabriel River for purposes of protection and restoration. The recent emergence of new mini parks, community gardens and dog parks has greatly increased access to open space for many in the community.

The Open Space and Recreation Element includes an ambitious goal of providing eight acres of open space for each 1,000 residents. The Land Use Element supports this goal, and the Open Space PlaceType delineates areas where such new open space might be created.

STRATEGY No. 18: Increase open space in urban areas.

» LU Policy 18-1: Require that new development creatively and effectively integrates private open spaces into project design, both as green spaces and landscaped courtyards.

» LU Policy 18-2: Enhance street corridors and spaces between buildings by incorporating small green areas, native and drought-tolerant landscaping and street trees.

» LU Policy 18-3: Allow for and encourage small-scale agriculture on public and private properties, including community gardens, edible gardens and landscapes, small urban farms and gardens throughout the City

» LU Policy 18-4: Increase the number of trees, first prioritizing areas identified as tree deficient, to provide the maximum benefits of improved air quality, increased carbon dioxide sequestration, reduced stormwater runoff and mitigated urban heat island effect.

» LU Policy 18-5: Enhance access to safe open space and recreation facilities for all residents.

» LU Policy 18-6: Work to provide additional recreational or open space in communities with lack of sufficient access by exploring opportunities for joint use agreements with schools and religious institutions.

» LU Policy 18-7: Prioritize the location of new parks in underserved or low-income communities with the lowest ratio of park space per thousand residents.

» LU Policy 18-8: Pursue resources to clean up land that could safely be used for public recreation.

» LU Policy 18-9: Utilize Public Lands for Recreational Needs by coordinating with City departments, County, State and Federal agencies to utilize existing public lands such as flood control channels, utility easements and Water Department properties to provide for such recreational needs as hiking and biking.

» LU Policy 18-10: Prioritize vacant and underutilized land for the development of new green space, including parks, community gardens and local urban farms in park-poor communities.

» LU Policy 18-11: Identify and inventory potential community garden or urban farm sites within existing parks, public easements, rights-of-way and schoolyards, and prioritize site use as community gardens in appropriate locations.

STRATEGY No. 19: Provide a variety of park facilities, marinas, beaches and water bodies that meet the diverse needs and interests of the community.

» LU Policy 19-1: Develop and maintain a high-quality network of natural and urban parks and open spaces that meet the needs of families, young adults, seniors, children and disabled individuals.

» LU Policy 19-2: Explore opportunities to create mini-parks and parklets within urbanized and growth areas of the City.

» LU Policy 19-3: Provide a balanced level of parks and recreational facilities to all areas of the City.

Goal No. 9: Preserve, Protect, Restore and Reconnect with Natural Resources

Long Beach will work to reconnect with nature's systems and natural processes to become a more sustainable, healthy and eco-friendly community. Using clean energy, best management practices, cutting-edge technologies and a willingness to learn from nature, the Long Beach community will become a regional trendsetter in environmental stewardship. The City is committed to preserving and restoring damaged and degraded water bodies, natural areas and wildlife habitats for present and future generations to learn from and enjoy.

Long Beach values its open space and natural habitat areas. Extensive open spaces provide rich aquatic and animal habitat, accommodating a diversity of wildlife, including birds, mammals, insects, fish and other marine animals. Long Beach will continue efforts to preserve expansive areas of this fragile ecosystem.

STRATEGY No. 20: Preserve, restore and protect water bodies, natural areas and wildlife habitats.

» LU Policy 20-1: Identify, acquire, protect and manage open spaces, sensitive biological resources, native habitat and vegetative communities, including wetlands and uplands, to support wildlife species and wildlife linkages and to add ecological value and climate resiliency to the entire open space system.

» LU Policy 20-2: Protect and preserve the marine ecosystem functions and biological marine resources.

» LU Policy 20-3: Restore damaged and degraded water bodies, natural areas and wildlife habitats for present and future generations to study and enjoy.

» LU Policy 20-4: Preserve and restore Long Beach's remaining wetlands, lagoons and other natural marine areas to improve water quality, re-establish native riparian plant and wildlife habitat, reconnect tidal flow and store carbon.

» LU Policy 20-5: Prevent stormwater runoff and pollutants from entering natural water bodies, wildlife habitats, wetlands, rivers and the Pacific Ocean.

» LU Policy 20-6: Transition off-shore oil islands to natural resource and recreational areas.

» LU Policy 20-7: Identify and establish wildlife movement corridors between urban open spaces, wetlands and the San Gabriel and Los Angeles Rivers.

» LU Policy 20-8: Manage and restore land to increase carbon storage and minimize greenhouse gas emissions in a sustainable manner by increasing the City's carbon sinks over time.

» LU Policy 20-9: Recycle or beneficially reuse a majority and growing proportion of the City's wastewater supply.

» LU Policy 20-10: Seek to supply a majority and growing proportion of the City's water for both domestic and non-potable demand through use of reclaimed and recharged groundwater sources by 2030.

» LU Policy 20-11: Coordinate with other agencies to reduce stormwater runoff by capturing runoff for groundwater recharge, irrigation and recycling purposes.

» LU Policy 20-12: Ensure minimization of potential development impacts in accordance with policies for protection of natural resources in the Natural Resource Protection Policies section in the Appendix.

STRATEGY No. 21: Reconnect with nature's systems and natural processes.

» LU Policy 21-1: Transition the Los Angeles and San Gabriel Rivers to more attractive, multi-functional, healthier environments that are easily accessible for passive recreation.

» LU Policy 21-2: Study the reconfiguration of the Long Beach Breakwater in San Pedro Bay to improve and restore ecosystems and natural ocean processes.

» LU Policy 21-3: Continue to explore opportunities to provide leadership in intergovernmental coordination of environmental stewardship and protection of nature's systems and natural processes.

» LU Policy 21-4: Promote learning programs and training activities that educate and inform about the natural environment.

- LU Policy 21-5: Encourage the creation and expansion of nature centers, interpretive displays and wildlife habitats along the Los Angeles and San Gabriel Rivers.

- LU Policy 21-6: Promote green infrastructure systems to preserve natural resources and to clean and filter out toxins from water bodies.

- LU Policy 21-7: Support opportunities for eco-tourism to celebrate and showcase natural assets such as the Los Cerritos Wetlands, the Los Angeles River, the Dominguez Gap Wetlands and the beachfront, while creating a stronger tourism draw for the City.

Implementation

Identifying Working Solutions

5

"When it is obvious that the goals cannot be reached, don't adjust the goals, adjust the action steps."

Confucius
Chinese teacher, editor, politician and philosopher

5

Implementation

Identifying Working Solutions

- Implementation Overview 126
- Citywide Implementation Strategies 127
  - » Sustainable Development Patterns and Building Practices 127
  - » Economic Development and Job Growth 128
  - » Growth and Change 129
  - » Neighborhood Preservation and Enhancement 130
  - » Broad-based Housing Opportunities 131
  - » Fair and Equitable Land Use Plan 132
  - » Green Industries and Jobs 133
  - » Efficient Energy Resources Management 134
  - » Reliable Public Facilities and Infrastructure 135
  - » Increased and Diversified Open Space 136
  - » Natural Resources Restoration and Reconnection 137
- Neighborhood Strategies 140
  - » North Long Beach 142
  - » Bixby Knolls 144
  - » Westside and Wrigley 146
  - » Eastside 149
  - » Central 152
  - » Traffic Circle 155
  - » Downtown 157
  - » Midshore 160
  - » Southeast 163

IMPLEMENTATION OVERVIEW

Realizing our vision for Long Beach, at both citywide and neighborhood-specific levels, is accomplished through a series of implementation measures and strategies. These measures and strategies translate the overall direction set forth in the Land Use Element from general terms to specific actions. As such, the Implementation Plan outlined in this chapter will guide City officials, commissions and committees, staff and the public in the overall effort to put into practice the Land Use Element goals, strategies and policies.

This chapter consists of two sections: 1) Citywide Implementation Strategies (Table LU-4), and 2) Neighborhood Strategies. The citywide measures address topics that apply to the City as a whole, while the neighborhood strategies are tailored to specific community and neighborhood areas. Neighborhood strategies involve both preservation and change within centers and along corridors, particularly with regard to access, mobility and open space.

Table LU-4 identifies the Land Use Element implementation measures. The table also identifies responsible departments, related policies from Chapter 4 (Land Use Plan) and the time frame to complete the implementation strategies.

» **Responsible Department(s).** The lead City department which has primary responsibility for completion of a program will be listed. If additional departments or external agencies are involved in a critical or substantial supporting role, they are also listed.

» **Related Policies.** The Citywide Implementation Strategies are correlated with one or more Citywide Goals, Strategies and Policies. Each Citywide Implementation Strategy is presented with a timeframe to guide the implementation of the Land Use Element.

» **Time Frame.** A timeframe for existing and proposed (new) strategies and programs will be identified. Many strategies operate on an ongoing basis and are indicated as such. The timelines presented are only an estimate and may not occur as indicated due to unforeseen event, changes in funding, real estate market conditions or City operations.

Key to Time Frames:

» Short-term = 0-5 years
» Mid-term = 5-10 years
» Long-term = 10-20 years
» Ongoing = May require short-, mid-, and long-term actions

CITYWIDE IMPLEMENTATION STRATEGIES

Table LU-4: Citywide Implementation Strategies

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
Sustainable Development Patterns and Building Practices					
LU- M-1	Update the Zoning Regulations and Zoning Districts Map to include new zoning districts and development standards that are consistent with the PlaceTypes, goals, strategies and policies outlined in this Land Use Element. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-10	●			
LU- M-2	Update the Zoning Regulations to include urban form standards that address the interface with street frontage, appropriate massing and compatibility standards based on context and location. Ensure the regulations allow a mix of uses and accommodate transit, walking and biking facilities. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-5, 7-6, 7-7, 7-8, 7-10, 7-11, 14-3	●			
LU- M-3	Consider including development incentives in the Zoning Regulations that allow greater development flexibility if projects include affordable housing; creative open space; cultural amenities; historic preservation or green building elements beyond those required; renewable energy components; and transit, pedestrian and bicycle amenities. **Responsible Department:** Development Services **Related Policies:** LU Policy 1-3, 4-2, 7-5, 7-10, 7-11, 12-1, 13-1	●			
LU- M-4	Reinvent commercial corridors by creating compact, mixed-use land use patterns and making streets safer for pedestrians, bicyclists and transit users. **Responsible Department:** Development Services **Related Policies:** LU Policy 1-7, 5-2, 5-3, 5-4, 7-7, 7-9, 10-3, 11-1, 14-3				●
LU- M-5	Work with Long Beach Transit and other transit agencies to link employment and education centers with mass transit and bicycle systems. **Responsible Department:** Development Services **Supporting Department:** Long Beach Transit **Related Policies:** LU Policy 5-2, 5-3, 5-4, 5-5, 10-1, 10-5, 13-1, 16-1, 16-2, 16-3				●
LU- M-6	Continue to implement the Downtown Plan to promote the development of a compact downtown core. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-7				●
LU- M-7	Continue to create and update master plans for large employment and higher education centers, including the Port of Long Beach Master Plan, Golden Shore Master Plan, California State University at Long Beach Campus Master Plan, Long Beach City College 2020 Unified Master Plan and the Long Beach Memorial Medical Center 2005 Master Plan of Land Uses. **Responsible Department:** Development Services **Supporting Department:** Harbor Department **Related Policies:** LU Policy 6-1, 7-1				●
LU- M-8	Require that all new City building projects and major renovations achieve at least LEED silver certification. **Responsible Department:** Development Services **Related Policies:** LU Policy 1-3, 1-4				●

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-9	Require that all new City leases and tenant improvements follow LEED standards. Require energy efficiency standards to be part of all City lease/rental agreements. **Responsible Department:** City Manager (Sustainability) **Supporting Department:** Financial Management **Related Policies:** LU Policy 1-3, 1-4				●
LU- M-10	Continue to utilize solar power within public buildings and on public sites, and continue to study means by which solar power can be incorporated into all aspects of municipal services. **Responsible Department:** City Manager (Sustainability) **Related Policies:** LU Policy 1-3, 2-1				●
LU- M-11	Continue to implement the Sustainability Action Plan. Introduce new goals and action measures that promote sustainability, including items related to land use and mobility planning, increasing walking and biking, increasing energy efficiency, reducing greenhouse gases and promoting renewable energy. **Responsible Department:** City Manager (Sustainability) **Related Policies:** LU Policy 1-1, 1-3, 1-4, 2-1				●
LU- M-12	Create innovative renewable energy partnerships and demonstration projects. **Responsible Department:** City Manager (Sustainability) **Related Policies:** LU Policy 2-1		●		
Economic Development and Job Growth					
LU- M-13	Invest in infrastructure systems and community services that support a wide range of industries, including high technology, telecommunications, aerospace, green technology, renewable energy, healthcare, higher education, manufacturing, port and shipping, professional services, restaurants/ entertainment and the film industry. **Responsible Department:** Economic Development **Supporting Department:** Public Works **Related Policies:** LU Policy 3-1				●
LU- M-14	Continue to provide and improve services and programs to assist new businesses and developers in navigating the City's permitting and development process. **Responsible Department:** Development Services **Supporting Department:** Economic Development **Related Policies:** LU Policy 3-1				●
LU- M-15	Streamline permitting process to help local businesses establish and grow. **Responsible Department:** Development Services **Related Policies:** LU Policy 3-1, 3-4, and 3-5				●
LU- M-16	Continue to use the City's Economic Development Team as a resource for finance, real estate, business incentives, technology, international trade and workforce development, as well as a service that provides businesses with the data and technical assistance needed to make informed decisions. **Responsible Department:** Economic Development **Related Policies:** LU Policy 3-1				●
LU- M-17	Continue to implement the City of Long Beach Economic Development Implementation Plan that includes objectives to increase the number of businesses, employment, sales tax revenue and retail and business services for residents and neighborhoods, while diversifying the portfolio of Long Beach jobs offering opportunities for both college and non-college educated workers. Work with the Economic Development Commission to support the Economic Development Blueprint. **Responsible Department:** Economic & Property Development **Supporting Department:** Development Services **Related Policies:** LU Policy 3-7, 6-7				●

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-18	Continue to offer business loan programs for new start-up businesses. Offer incentives through programs such as the Retail Sales Tax Rebate, Foreign Trade Zone and the Historically Underutilized Business (HUB) Zone. **Responsible Department:** Economic Development **Related Policies:** LU Policy 3-1				●
LU- M-19	Continue to support and market the "shop local" campaign designed to encourage residents to spend locally. **Responsible Department:** Economic Development **Related Policies:** LU Policy 3-1				●
LU-M-20	Work with higher educational institutions on ways to attract identified employment sectors of emerging interest to students. **Responsible Department:** Economic & Property Development Department **Supporting Department:** Department of Development Services **Related Policies:** LU Policy 3-1				●
LU-M-21	Prioritize technology modernization initiatives and identifies funding sources to pay for modernization improvements and is consistent with the City's Capital Improvement Program. **Responsible Department:** Economic Development **Related Policies:** LU Policy 7-6				●
LU-M-22	Collaborate with local tourist attractions and cultural organizations, such as the Ranchos los Cerritos, Ranchos los Alamitos, Aquarium of the Pacific, local art museums and attractions hosted by California State University Long Beach to determine ways in which the City can support these institutions to reach a broader audience and attract visitors from outside the City's current constituent base. **Responsible Department:** Economic Development **Supporting Department:** Development Services **Related Policies:** LU Policy 6-14				●
LU- M-23	Encourage neighborhood and business groups to sponsor or participate in local community events that draw residents and foster community involvement. **Responsible Department:** Development Services **Supporting Department:** Economic Development **Related Policies:** LU Policy 14-1, 14-2				●
Growth and Change					
LU- M-24	Implement major change areas identified in the Land Use Plan and Map LU-20. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-10				●
LU- M-25	Amend the Zoning Regulations to include flexible standards targeted for infill development. These standards should address compatibility, appropriate and flexible parking requirements, public improvements, traffic levels of service, transit access, bicycle and multi modal facilities and off-site improvements (including alleys, roadways and sidewalks). **Responsible Department:** Development Services **Related Policies:** LU Policy 1-1, 3-1, 6-6, 6-10	●			
LU- M-26	Amend Title 21 of the Municipal Code to create new PlaceType districts that allow higher density development and new infill opportunities. **Responsible Department:** Development Services **Related Policies:** LU Policy 1-1, 1-2, 3-1, 7-6, 7-10	●			

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-27	Conduct an infill opportunity study within target areas that allow greater residential and commercial intensities. Target areas include downtown, commercial corridors and around transit stations. The study should identify infill opportunity sites and create new financial and regulatory strategies to encourage the development of infill projects. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-6, 7-9	●			
LU- M-28	Identify which recommendations of the Long Beach Boulevard Infill Analysis and Redevelopment Strategies merit funding. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-9	●			
LU- M-29	Identify public-private partnership opportunities and prioritization for infill and transit-oriented development projects that support transit, housing affordability and the revitalization of neighborhoods. **Responsible Department:** Development Services **Related Policies:** LU Policy 1-2, 7-6	●			
LU- M-30	Identify strategies to assist in the assembly of land to enable projects that support transit and affordable housing. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-6, 7-11	●			
LU- M-31	Through a community collaborative process, develop and implement a specific plan for the SEASP area that addresses the maintenance and development of major underutilized properties, incorporates sustainability strategies, increases access to the waterfront, and balances development impacts with the preservation and rehabilitation of the Los Cerritos Wetlands. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-12	●			
LU- M-32	Develop and implement a comprehensive plan for the Belmont Pier Complex. **Responsible Department:** Development Services **Supporting Department:** Parks, Recreation & Marine **Related Policies:** LU Policy 7-1		●		
LU- M-33	Rehabilitate the property at Alamitos Bay Landing in a manner that balances new infill development with improved connections to the waterfront and provides more public amenities. **Responsible Department:** Development Services **Supporting Department:** Parks, Recreation & Marine **Related Policies:** LU Policy 7-2			●	
LU- M-34	Continue to implement the Downtown Plan. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-7				●
Neighborhood Preservation and Enhancement					
LU- M-35	Amend Title 21 of the Municipal Code to include compatibility development standards and urban form strategies that protect low-density development from higher density/intensity developments. Measures may include stepping down building height, reducing building mass, decreasing the number of stories and window placement, among others. **Responsible Department:** Development Services **Related Policies:** LU Policy 7-8, 7-10, 9-1	●			
LU- M-36	Use the development review process to identify and remove impacts associated with new development projects on low-density residential uses. **Responsible Department:** Development Services **Related Policies:** LU Policy 6-8, 9-1				●

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-37	Implement the neighborhood strategies identified in this chapter, focusing on centers, corridors, access and mobility, open space and sustainability. **Responsible Department:** Development Services **Related Policies:** LU Policy 9-1, 9-2, 10-1, 10-2,10-3, 10-4, 11-1, 11-2, 11-3, 11-4, 11-5				●
LU- M-38	Continue to operate the Neighborhood Services Bureau and Neighborhood Resource Center to provide programs and services designed to improve Long Beach neighborhoods. **Responsible Department:** Development Services **Related Policies:** LU Policy 9-2, 15-1, 15-2				●
LU- M-39	Continue to maintain and update the List of Neighborhood Groups to improve communications between the many Long Beach neighborhood organizations and City Hall. Use the list as a tool for organizations' networking, as well as for residents seeking involvement in their own neighborhoods. **Responsible Department:** Development Services **Related Policies:** LU Policy 9-2, 15-1, 15-2				●
LU- M-40	Adopt land use regulations and programs that encourage healthy food options in local neighborhoods. Initiatives could include establishing additional community gardens and farmers' markets, allowing edible estates and urban agriculture, and discouraging drive-through facilities. **Responsible Department:** Development Services **Supporting Department:** Health and Human Services **Related Policies:** LU Policy 11-1, 11-3, 11-4, 11-5	●			
LU- M-41	Evaluate the feasibility of imposing density boundaries for drive-through and/or free standing fast-food restaurants. This could be citywide, in neighborhoods with overconcentration of fast food, or around sensitive uses and schools. **Responsible Departments:** Health and Human Services, Development Services **Related Policies:** LU Policy 11-4, 11-6, 11-7, 14-3, 14-4, 14-5	●			
LU- M-42	Continue to implement health programs and plans, including, but not limited to the North Long Beach HEAL (Healthy Eating Active Living) Zone, Healthy Active Long Beach, Health Promotion and Wellness Program, Community Health Improvement Plan 2014-2020, Healthy Long Beach Plan 2014-2019 and similar programs and plans. **Responsible Department:** Health and Human Services **Related Policies:** LU Policy 11-3, 11-4, 11-5, 11-6				●
LU- M-43	Continue to implement the Historic Preservation Element. **Responsible Department:** Development Services **Related Policies:** LU Policy 9-1, 9-2				●
LU-M-44	Evaluate the feasibility of providing development incentives for desirable community uses such as full service grocery stores, community facilities, banks/credit unions, federally qualified health centers, child care etc. Development incentives could include reduced parking requirements, increased FAR, or FAR exemptions for specific community-serving uses. **Responsible Department:** Development Services **Supporting Department:** Health and Human Services **Related Policies:** LU Policy 10-7, 10-8		●		
Broad-based Housing Opportunities					
LU- M-45	Work with non-profit organizations to create workforce housing projects near large employment centers such as downtown, California State University at Long Beach, local hospitals and medical centers, Regional-Serving Facility PlaceTypes, and other places where residential development would be appropriate. **Responsible Department:** Development Services **Related Policies:** LU Policy 5-2, 12-1, 12-3, 12-7, 13-2, 13-3				●

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-46	Inventory vacant lots citywide. **Responsible Department:** Development Services **Related Policies:** LU Policy 18-10, 18-11, 19-2	●			
LU- M-47	Work with non-profit housing developers to create and develop affordable housing options. **Responsible Department:** Development Services, Health and Housing Services **Related Policies:** LU Policy 12-1, 13-1				●
LU- M-48	Implement the Housing Element. **Responsible Department:** Development Services **Related Policies:** LU Policy 12-1, 12-4, 13-1		●		
Fair and Equitable Land Use Plan					
LU- M-49	Conduct neighborhood and community area assessments to better understand current businesses and services, public facilities and amenities. Determine neighborhoods' needs for services and facilities and develop strategies to address deficiencies. **Responsible Department:** Development Services **Related Policies:** LU Policy 14-1, 14-3, 15-1, 17-3		●		
LU- M-50	Develop an engagement process to actively involve residents, businesses, property owners and organizations within low-income and minority neighborhoods early in planning development processes involving projects that may result in disproportionately high and adverse human health or environmental burdens to these neighborhoods. Utilize multilingual outreach methods to allow residents whose primary language is not English to be involved in decision-making processes. **Responsible Department:** Development Services **Related Policies:** LU Policy 15-2, 16-7, 16-11				●
LU-M-51	Work with agencies and organizations to prepare environmental justice studies that evaluate and mitigate the adverse effects of new projects and operations that have the potential to result in disproportionately high and adverse human health or environmental effects on low-income and minority populations. **Responsible Department:** Development Services **Related Policies:** LU Policy 15-2, 16-6, 16-8, 16-9, 16-10				●
LU- M-52	Continue the community engagement process and outreach to surrounding neighborhoods, stakeholders and businesses to stimulate dialogue and more proactively address community concerns. **Responsible Department:** Development Services **Related Policies:** LU Policy 15-1, 15-2				●
LU- M-53	Continue to implement the Long Beach I-710 Community Livability Plan aimed at incorporating and prioritizing livability improvements in the I-710 freeway corridor neighborhoods. **Responsible Department:** Public Works **Supporting Departments:** Development Services; Harbor Department; Health and Human Services; Police Department and Parks, Recreation and Marine **Related Policies:** LU Policy 16-4				●
LU- M-54	Continue to implement the West Long Beach Livability Implementation Plan to improve the quality of life in West Long Beach and to bring to fruition the community's vision of a healthy, vibrant and livable neighborhood though land use planning and capital improvement projects. **Responsible Department:** Development Services **Related Policies:** LU Policy 16-2, 16-3				●
LU- M-55	Continue to develop and implement innovative programs aimed at reducing the air pollutants from port operations (e.g., San Pedro Bay Clean Air Action Plan, Clean Truck Programs, Main Engine Low-Sulfur Fuel Incentive Program and Shoreside Electricity). **Responsible Department:** Harbor Department **Related Policies:** LU Policy 10-6, 16-2, 16-3				●

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-56	Work with regional planning agencies, community-based organizations and industry representatives to design freight facilities near neighborhoods in ways that reduce exposure to goods movement activities and support health, environmental and economic objectives. **Responsible Department:** Harbor Department **Related Policies:** LU Policy 10-6, 16-2, 16-3			●	
LU-M-57	In order to build equity considerations into planning and decision making processes, work with the City of Long Beach's Office of Equity to ensure relevant Development Services staff are trained in equity principles and equity evaluation tools to develop, implement and evaluate community engagement processes, plans and proposals from an equity lens. **Responsible Department:** Development Services, Department of Health and Human Services **Related Policies:** LU Policy 10-6, 16-1				●
LU-M-58	Continue to develop the Nuisance Motels Pilot Program while exploring opportunities for longer-term strategies including a Nuisance Motel Ordinance, methods for limiting new motels in over-concentrated areas, and opportunities for amortization . **Responsible Department:** Development Services, Department of Health and Human Services **Supporting Departments:** City Manager's Office, Police Department, Department of Health & Human Services **Related Policies:** LU Policy 16-2, 16-10, 16-12				●
Green Industries and Jobs					
LU- M-59	Attract renewable energy and green technology manufacturing companies to establish a presence/ office in Long Beach. Facilitate the creation of jobs in the renewable/clean energy sector. **Responsible Department:** Economic Development **Related Policies:** LU Policy 2-1, 3-1, 3-5, 4-1, 4-2		●		
LU-M-60	Contact and consult with California Native American tribes prior to amending or adopting any general plan or specific plan, or designating land as open space, pursuant to Section 65352.3 of the California Government Code; establish consultation process with California Native American tribes early in the California Environmental Quality Act process pursuant to Public Resources Code Section 21080.3.1. **Responsible Department:** Development Services **Related Policies:** LU Policy 15-3, 15-4				●
LU- M-61	Work with the Joint Use Committee between the City of Long Beach and LBUSD, to identify opportunities for joint use agreements to provide recreation spaces and social and community services on school sites, outside of regular school hours. **Responsible Departments:** Health and Human Services and Parks, Recreation and Marine **Related Policies:** LU Policy 17-5, 19-1, 19-2				●
LU- M-62	Continue to implement the Green Recognition Program, which is designed to encourage Long Beach business owners who have implemented sustainable practices to share their success stories and receive recognition for going green. **Responsible Department:** City Manager (Sustainability) **Related Policies:** LU Policy 2-1, 3-1				●
LU- M-63	Partner with Pacific Gateway Workforce Investment Network's Green Job Corps, California State University at Long Beach, Long Beach City College and other educational organizations, agencies and non-profit organizations to coordinate the creation of a training academy and programs for green jobs. **Responsible Department:** Economic Development **Related Policies:** LU Policy 3-2, 5-6		●		
LU- M-64	Work with Southern California Edison and other utility companies to provide rebates and savings programs for businesses using green technologies or emphasizing green industries. **Responsible Department:** Public Works **Related Policies:** LU Policy 2-1, 4-1		●		

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-65	Repurpose business development grants and loans for green business development in Long Beach. Encourage technology and manufacturing companies to take advantage of Long Beach green business development opportunities. **Responsible Department:** Economic Development **Related Policies:** LU Policy 1-4, 2-1, 4-2		●		
LU- M-66	Implement a City green business program that incorporates goals and strategies for waste reduction, energy efficiency, water conservation, green purchasing and similar strategies. **Responsible Department:** City Manager (Sustainability) **Supporting Departments:** Public Works, Water Department, Financial Management **Related Policies:** LU Policy 2-1, 3-1		●		
LU- M-67	Encourage the formation of a local environmental business network to share information and promote green business strategies and best practices. **Responsible Department:** Economic Development **Related Policies:** LU Policy 2-1, 3-1	●			
LU- M-68	Develop a "shop green" program to increase consumer awareness about local green businesses and products so that consumers can easily make green purchasing choices. **Responsible Department:** City Manager (Sustainability) **Supporting Department:** Economic Development **Related Policies:** LU Policy 2-1, 3-1			●	
LU- M-69	Conduct green business workshops designed to help local businesses go green and showcase local green vendors and products. **Responsible Department:** City Manager (Sustainability) **Related Policies:** LU Policy 2-1, 3-1	●			
Efficient Energy Resources Management					
LU- M-70	Explore funding opportunities to provide incentives for businesses to make environmental improvements. **Responsible Department:** Economic Development **Related Policies:** LU Policy 16-2, 16-4		●		
LU- M-71	Explore the feasibility of establishing a City Hall liaison to help business owners navigate environmental requirements. **Responsible Department:** Economic Development **Related Policies:** LU Policy 16-2, 16-4, 16-6		●		
LU- M-72	Explore the feasibility of establishing "Green Zones," a Clean Up Green Up program, or similar, to allow businesses with harsh emissions to "Clean Up" by providing resources and programs through the City and partner agencies. Green Zones are defined as a community-led strategy to transform areas in Long Beach that are overburdened by pollution and inequity into healthy, thriving neighborhoods. Green Zones in Long Beach will reflect the needs, priorities and issues identified by residents who know their community best. Green Zones will focus on the low-income communities and people of color in West, Central and North Long Beach—who are most impacted by the local pollution—while these equity measures will benefit the entire City. **Responsible Departments:** Development Services, Economic Development **Related Policies:** LU Policy 16-2, 16-3, 16-4, 16-6		●		
LU- M-73	Continue to update the City's greenhouse gas (GHG) emissions inventory with the California Climate Action Registry, which will enable the City to better meet future environmental regulations and secure future grant funding for sustainability programs. **Responsible Department:** Development Services **Related Policies:** LU Policy 2-1, 4-1, 6-6, 6-11				●

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-74	Through the Port of Long Beach, provide Greenhouse Gas Emissions Reduction Grant Program and similar programs aimed at implementing strategies to reduce the impacts of greenhouse gases. **Responsible Department:** Development Services **Supporting Department:** Harbor Department **Related Policies:** LU Policy 16-2		●		
LU- M-75	Continue to implement the 2010 Clean Air Action Plan Update aimed at reducing air pollution emissions from port-related cargo movement. **Responsible Department:** Harbor Department **Related Policies:** LU Policy 16-2				●
LU- M-76	Continue to consult with the Port of Los Angeles to reduce emissions from port operations. **Responsible Department:** Harbor Department **Related Policies:** LU Policy 16-2				●
LU- M-77	Continue to support/coordinate programs and organizations aimed at improving energy efficiency and reducing greenhouse gas emissions. **Responsible Department:** Development Services **Related Policies:** LU Policy 1-4, 2-1				●
LU- M-78	Implement the Technology Advancement Program to identify, evaluate and demonstrate new and emerging emissions reduction technologies/strategies that could be utilized in future updates to the Clean Air Action Plan. **Responsible Department:** Harbor Department **Related Policies:** LU Policy 2-1				●
LU- M-79	Consult with utility companies in promoting and developing renewable energy and emerging greenhouse gas reduction technologies. Identify potential sites within the Regional-Serving Facilities PlaceType to locate such facilities. **Responsible Department:** Public Works **Supporting Department:** Development Services **Related Policies:** LU Policy 2-1	●			
Reliable Public Facilities and Infrastructure					
LU- M-80	Provide coordination between long-range land use planning and infrastructure improvements to ensure there are adequate infrastructure and community services to meet existing and future developments. **Responsible Department:** Development Services and Public Works **Related Policies:** LU Policy 17-1, 17-2		●		
LU- M-81	Work with the Joint Use Committee between the City of Long Beach and LBUSD to identify opportunities for joint use agreements to provide recreation spaces and social and community services on school sites, outside of regular school hours. **Responsible Departments:** Heath and Human Services and Parks, Recreation and Marine **Related Policies:** LU Policy 17-5, 19-1, 19-2				●
LU- M-82	Continue to update and implement the Capital Improvement Program to make strategic improvements to existing infrastructure. **Responsible Department:** Public Works **Related Policies:** LU Policy 17-1, 17-2, 17-4				●

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-83	Consult with the US Navy NWS Seal Beach Community Planning Liaison Officer (CPLO) to help identify any critical issues to be considered or addressed in the planning process, define the "military influence area" (MIA), and ensure that the MIA addresses the health and welfare of the public, as well as the military mission. Ensure compliance with SB 1468, to ensure consideration of military readiness in the planning process, compliance with CA 1462 to ensure proper notification to the military.. **Responsible Department:** Development Services **Supporting Departments:** Public Works, Government Affairs **Related Policies:** LU Policy 8-3				●
Increased and Diversified Open Space					
LU- M-84	Increase parks and open space areas to meet the City standard of eight acres of park land for every 1,000 Long Beach residents, particularly in neighborhoods where there is a deficiency in park space. **Responsible Department:** Development Services **Supporting Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 19-1, 19-2, 20-1, 20-6, 20-7			●	
LU- M-85	Continue to implement and update the Department of Parks, Recreation and Marine Strategic Plan and the Open Space and Recreation Element. **Responsible Departments:** Development Services and Parks, Recreation and Marine **Related Policies:** LU Policy 19-1, 19-3, 20-2				●
LU- M-86	Update and implement the Long Beach Riverlink Plan to create a continuous greenway of pedestrian and bike paths and linkages along the east bank of the Los Angeles River, as well as to connect to existing and future parks, open space and beaches along western portions of the City. **Responsible Department:** Parks, Recreation and Marine **Supporting Departments:** Public Works, Development Services **Related Policies:** LU Policy 19-1, 19-2, 19-3, 20-1, 20-2, 20-3, 20-4, 21-1	●			
LU- M-87	Pilot streetlet demonstration projects along Long Beach Boulevard to test the effectiveness and design for permanent streetlet projects. Pilots will range from one day to a yearlong demonstration. **Responsible Department:** Development Services **Supporting Department:** Public Works **Related Policies:** LU Policy 18-7, 18-9, 19-1, 19-2, 19-3	●			
LU- M-88	Increase the diversity of urban recreational spaces to include pocket parks, infill parks, community gardens, small green spaces, rooftop gardens, urban agriculture and gardening spaces, paseos, linear parks, small play fields and courts, playgrounds, urban trails and similar urban open spaces. **Responsible Department:** Development Services **Supporting Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 19-2			●	
LU- M-89	Focus on locating new parks and open spaces in residual and innovative areas such as remnant freeway rights-of-way, abandoned railway lines, utility corridors, riverfronts and waterfronts, vacant lots, underutilized or irregular parcels and rooftops. **Responsible Department:** Development Services **Supporting Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 18-9, 19-1, 19-2, 20-1				●
LU- M-90	Create joint-use park facilities and work with Long Beach Unified School District to enhance school sites for public use. **Responsible Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 18-6, 19-1, 19-2		●		

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-91	Continue to require all new developments to provide usable open space or in-lieu fees aimed at meeting recreational demands. **Responsible Department:** Development Services **Related Policies:** LU Policy 18-1				●
LU- M-92	Explore development of an aggressive urban forestry plan to enhance existing tree planting programs to increase the number of trees and improve the urban forest along corridors and in neighborhoods. **Responsible Department:** Public Works **Related Policies:** LU Policy 18-4; UDE Strategy No. 61		●		
LU- M-93	Aggressively promote tree planting in City parks and open spaces and promote the tree dedication program. **Responsible Department:** Public Works **Related Policies:** LU Policy 18-4		●		
LU- M-94	Provide opportunities for nontraditional parks and park amenities such as skate/bicycle parks and plazas, roller hockey courts, small tot lots, spray pools, dog parks and ball courts (handball, tetherball, volleyball). **Responsible Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 19-3		●		
LU- M-95	Reuse vacant properties as community amenities such as gardens, parks or temporary green spaces to reduce blight and safety issues, increase residents' access to needed parks and open spaces, and spur additional investment in neighborhoods. **Responsible Department:** Development Services **Supporting Departments:** Parks, Recreation and Marine, City Manager (Sustainability) **Related Policies:** LU Policy 19-2		●		
LU- M-96	To address existing homes in the designated "Open Space" area of Rosie's Dog Beach, balancing the needs of private property owners and beach visitors, continue the Zoning Code provision to allow basic remodels by-right as well as additions up to 250 square feet for residential uses located within the Open Space PlaceType. **Responsible Department:** Development Services **Related Policies:** LU Policy 16-4	●			
Natural Resources Restoration and Reconnection					
LU- M-97	Leverage public and private dollars to implement habitat and wetland restoration projects in the community. Develop new and enhance existing marine life habitats. **Responsible Departments:** Development Services, Parks, Recreation and Marine **Related Policies:** LU Policy 20-1, 20-3, 20-4, 20-8		●		
LU- M-98	Consult with non-profit organizations, regional agencies and property owners to develop programs and mechanisms to acquire and restore lands. **Responsible Department:** Development Services **Supporting Department:** Harbor Department **Related Policies:** LU Policy 20-1 , 20-8, 20-11, 21-3				●
LU- M-99	Develop feasibility plans that identify approaches and financial opportunities to protect and restore the City's urban creek system, storm channels, river channels, wetlands and habitat areas. **Responsible Department:** Public Works **Supporting Department:** Development Services **Related Policies:** LU Policy 20-3, 20-4, 20-8		●		

No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-100	Implement the Low Impact Development (LID) Best Management Practices (BMP) Design Manual for all new qualified development projects. Require innovative measures and technologies to reduce urban runoff and improve water quality. **Responsible Department:** Public Works **Supporting Department:** Development Services **Related Policies:** LU Policy 20-5				●
LU- M-101	Consult with agencies, cities and jurisdictions in the Los Angeles and San Gabriel Rivers watersheds to implement storm water best management practices to reduce urban runoff pollutants. **Responsible Department:** Public Works **Related Policies:** LU Policy 20-5, 20-9, 20-11				●
LU- M-102	Require that streets, large parking lots and other expansive asphalt areas be designed to direct rainwater runoff to landscaped areas or cisterns. Where appropriate, replace impervious surfaces (e.g., sidewalks, driveways, outdoor patios and parking lots) with permeable materials. Drainage features that incorporate slow time of concentration, reduced pollution load from runoff and groundwater infiltration should be incorporated where appropriate. **Responsible Department:** Public Works **Supporting Department:** Development Services **Related Policies:** LU Policy 20-5	●			
LU- M-103	Identify sites and preserve significant areas that contribute to the infiltration of water into the local groundwater basin. **Responsible Department:** Public Works **Related Policies:** LU Policy 20-5, 20-8, 20-9, 20-11, 21-6		●		
LU- M-104	Expand storm water management education and outreach programs to include a watershed-wide program. Develop public-private educational partnerships to promote behavioral change. **Responsible Department:** Public Works **Related Policies:** LU Policy 20-5		●		
LU-M-105	Verify the feasibility of using reclaimed water as a major source of the City's domestic water supply by 2020. **Responsible Department:** Water Department **Supporting Department:** Development Services **Related Policies:** LU Policy 20-10	●			
LU- M-106	Continue to pursue the Long Beach Breakwater Reconnaissance Study and undertake a public outreach program to explore options and funding opportunities. Consult with the Navy regarding impacts to military readiness. **Responsible Department:** Public Works **Related Policies:** LU Policy 21-2				●
LU- M-107	Sponsor and encourage community participation in community festivals focused on environmental education and stewardship. Promote volunteer opportunities, including (but not limited to) adopt-a-beach, adopt-a-wetland, coastal cleanup days and opportunities at the Aquarium of the Pacific. **Responsible Department:** Development Services **Supporting Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 20-3, 21-3, 21-4	●			
LU- M-108	Support the Wetland and Marine Science Center at Colorado Lagoon and at El Dorado Nature Center and provide additional learning opportunities in outdoor classrooms. **Responsible Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 21-4, 21-5, 21-7				●

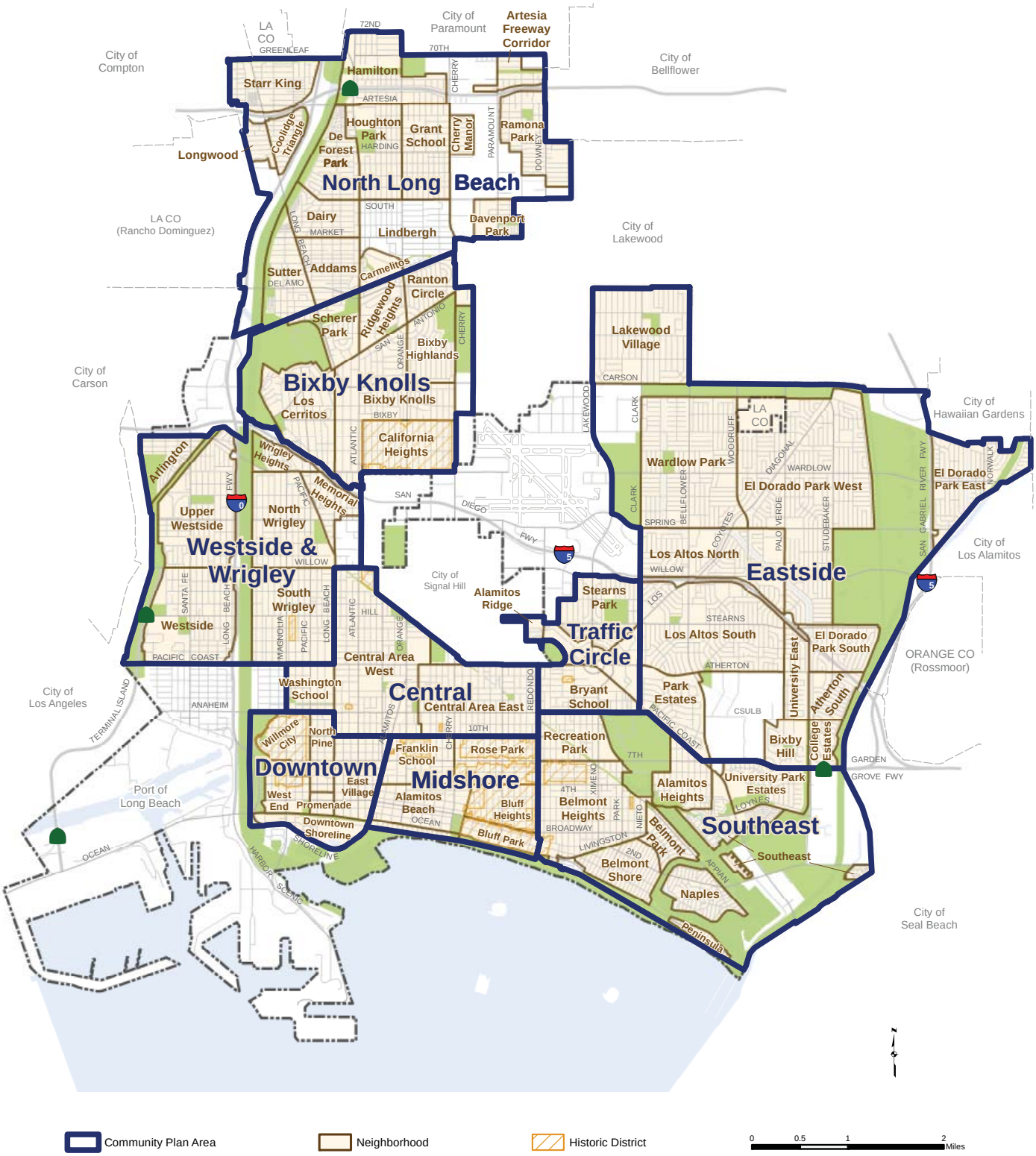
No.	Implementation Strategies	Time Frames			
		Short-term	Mid-term	Long-term	Ongoing
LU- M-107	Consult with schools and community groups to create partnerships in environmental education and provide lessons about nature, habitats and our impact on the environment. **Responsible Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 21-4	●			
LU- M-108	Identify partnerships, priorities, funding strategies and community outreach participation for preserving and rehabilitating wetlands and natural areas throughout Long Beach. **Responsible Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 21-3, 21-7		●		
LU- M-109	Identify partnerships and funding to establish an urban nature center along the Los Angeles River. **Responsible Department:** Parks, Recreation and Marine **Related Policies:** LU Policy 20-7, 21-1, 21-3, 21-7		●		
LU- M-110	Continue to implement the Long Beach Urban Forestry Management Plan. **Responsible Department:** Public Works **Related Policies:** LU Policy 19-1, 20-1				●

NEIGHBORHOOD STRATEGIES

Table LU-5: Community Plan Areas and Neighborhoods

Community Plan Areas	Neighborhoods		
North Long Beach	» Addams » Artesia Freeway » Carmelitos » Coolidge Triangle » Corridor » Cherry Manor	» Dairy » De Forest Park » Davenport Park » Grant School » Hamilton » Houghton Park	» Linbergh » Longwood » Ramona Park » Starr King » Sutter
Bixby Knolls	» Bixby Highlands » Bixby Knolls » California Heights	» Los Cerritos » Ranton Circle » Ridgewood Heights	» Scherer Park
Westside and Wrigley	» Arlington » Memorial Heights » North Wrigley » South Wrigley	» Upper Westside » Westside » Wrigley Heights	
Eastside	» Atherton South » Bixby Hill » College Estates » El Dorado Park East » El Dorado Park South	» El Dorado Park West » Lakewood Village » Los Altos North » Los Altos South » Park Estates	» Wardlow Park » University East
Central	» Central Area East » Central Area West	» Washington School	
Traffic Circle	» Alamitos Ridge » Bryant School	» Stearns Park » Traffic Circle	
Downtown	» Downtown Shoreline » East Village » North Pine	» Promenade » West Gateway » Willmore City	
Midshore	» Alamitos Beach » Bluff Heights	» Bluff Park » Franklin School	» Rose Park
Southeast	» Alamitos Height » Belmont Heights » Belmont Park	» Belmont Shore » Naples » Peninsula	» Recreation Park » Southeast » University Park Estates

Map LU-21
Community Plan Areas and Neighborhoods



North Long Beach

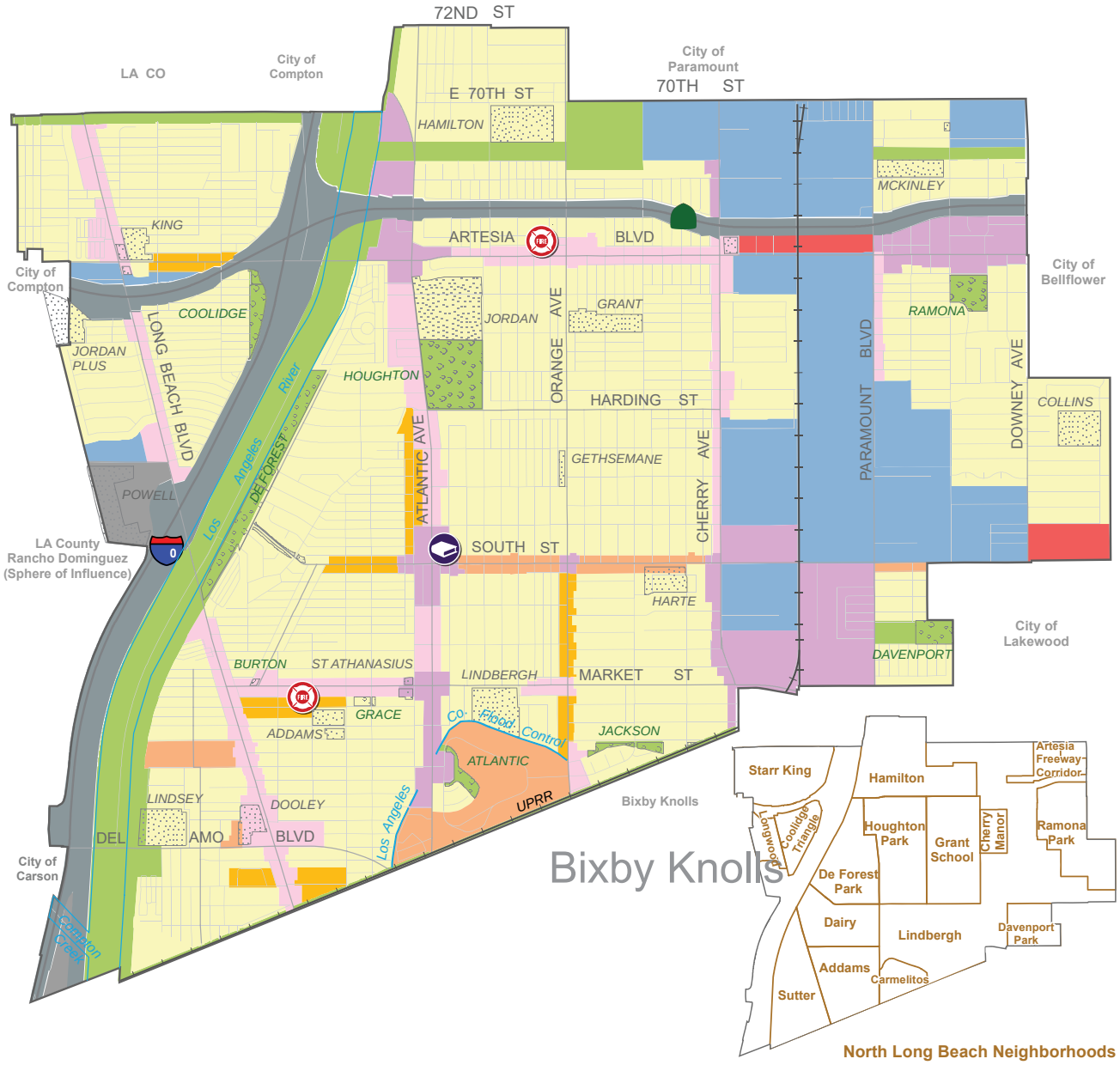
Context. Sixteen neighborhoods make up the North Long Beach or "Uptown" Community Plan Area, see Map LU-22. Most of the area is composed of single family homes, and most of the commercial uses exist along major avenues and in a handful of commercial nodes or centers. Generally, multi-family housing is concentrated along these more heavily-trafficked streets. Industrial uses are a significant feature in North Long Beach, especially between Cherry Avenue and Paramount Boulevard. The I-91 Artesia Freeway and the I-710 Long Beach Freeway cut through the area. Southern California Edison has an east/west utility easement running through the area, and the Union Pacific Railroad (UPRR) tracks define the southern boundary of North Long Beach.

Issues/Needs. For the most part, homes in North Long Beach are modest in size and these neighborhoods have remained relatively affordable. Retail opportunities are still limited; and a mix of commercial and residential buildings diffuse retail concentration along the streets. Schools and public services are adequate, but recreation open space and parks are scarce. Although the majority of properties are well kept, additional maintenance is needed on many buildings and landscapes throughout the area. Edges needing the most attention appear to be immediately adjacent to heavy industrial uses and busy commercial corridors, and along freeway, river and utility easements (i.e., Southern California Edison and Union Pacific Railroad). Also, with the proposed widening of the I-710 Freeway in order to accommodate more trade through the ports, neighborhoods may be further impacted by serious noise, traffic and air quality concerns.

Land Use Strategies.

1. Consolidate the intensity of commercial activities into neighborhood-serving nodes, at major corridor crossroads and in expanded commercial centers.
2. Facilitate the development of new multi-family housing along corridors between commercial nodes and centers.
3. Buffer heavy industrial activities from residential uses by encouraging some industrial properties to develop under their respective Neo-Industrial or commercial-oriented PlaceTypes.
4. Along Cherry Avenue, Paramount Boulevard and Downey Avenue use the Neo-Industrial PlaceType to develop cleaner and more attractive commercial and industrial properties.
5. Upgrade the quality of development by using design guidelines, zoning standards and improved design review processes to ensure that all new buildings, remodels and additions enhance the neighborhood fabric.
6. Use design guidelines and upgraded zoning standards to further protect established residential districts from the intrusion of commercial activities.
7. Continue to implement the North Long Beach Strategic Guide for Development and North Long Beach Street Enhancement master plans (originated under the Redevelopment Agency) including the North Village and North Library plans.
8. Seek opportunities to create open recreation and green areas, and implement the RiverLink Plan for the Los Angeles River.
9. Implement the I-710 Livability Plan.
10. Implement Mobility Element capital improvements for North Long Beach including:
    - » Artesia Boulevard Complete Streets Improvements.
    - » Atlantic Avenue Streetscape Enhancements.
    - » South Street Signal Improvements.
    - » Market Street Enhanced Bikeway Access.
    - » Walnut Avenue Bikeway.

Map LU-22
North Long Beach



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Fire Station
- Park
- School
- Water/Drainage
- Railroad

Map Not to Scale

Bixby Knolls

Context. Seven neighborhoods make up the Bixby Knolls Community Plan Area, see Map LU-23. The majority of the area is zoned for and developed with single-family homes, however, the area is also home to a broad mix of residential, commercial, institutional and open space uses. The Los Cerritos neighborhood includes the first housing tract in Long Beach and the first public schoolhouse. California Heights is a large historic district of attractive Spanish Colonial style homes developed in the 1920s and 1930s. Bixby Knolls has homes built in the 1940s and 1950s on generous lots with wide streets. Multi-family housing is concentrated along Carson Street, San Antonio Drive, between Long Beach Boulevard and Atlantic Avenue north of Wardlow Road, and around Los Cerritos Park. Commercial uses are concentrated along Long Beach Boulevard, Atlantic Avenue, Wardlow Road and San Antonio Drive. For the most part, properties are well-maintained throughout the community. The area is bounded on the west by the Los Angeles River, on the north by the Southern California Edison right-of-way, on the east by Forest Lawn and All Souls cemeteries, and on the south by the I-405 San Diego Freeway and the City of Signal Hill. The Virginia Country Club (private golf course) and the historic Rancho Los Cerritos are situated to the west.

Issues/Needs. Schools, a new police station at Scherer Park, a library on Atlantic Avenue, and a fire station on Long Beach Boulevard adequately serve the Bixby Knolls Community Plan Area. In recent years, the Bixby Knolls Business Improvement District has made progress in upgrading the commercial business environment, and the streetscape along Atlantic Avenue has become much more pleasant for pedestrians. Similar improvements are needed along other avenues, and elsewhere, where retail and mixed residential/commercial uses are encouraged in this plan. Much of Bixby Knolls lies beneath a Long Beach Airport major flight path and engine noise from planes has been an issue over the years, especially in the areas of California Heights closest to the airport. And although housing and commercial property maintenance is largely adequate in the Bixby Knolls communities, reinvestments will be needed. Beyond normal property maintenance and attempting to retain the unique character of each neighborhood, transitioning to low-water consuming landscapes and low-energy consuming buildings and materials will be a challenge for everyone, especially those with larger buildings and yards. Creating additional recreation and nature open spaces, and improving the edges along those that are extant including: Union Pacific Railroad and remaining Pacific Electric railway routes, Edison right-of-way corridors, the Los Angeles River and remnant parcels of undeveloped land, is also highly desirable.

Land Use Strategies.

1. Continue to monitor noise levels and implement the Long Beach Noise Ordinance, especially as it pertains to noise generated from airport-related activities.
2. Upgrade the quality of development by using appropriate design guidelines, zoning standards and improved design review processes to ensure that all new buildings, remodels and additions enhance the neighborhood fabric.
3. Use design guidelines and upgraded zoning standards to further protect established residential districts from the intrusion of commercial activities.
4. Consolidate the intensity of commercial activities along Long Beach Boulevard, Atlantic Avenue and Cherry Avenue, as depicted on the PlaceTypes Map.
5. Encourage the development of infill housing of low-density multi-family units along Carson Street between Atlantic Avenue and Orange Avenue.
6. Seek opportunities to create recreation and green areas, and implement the RiverLink Plan for the Los Angeles River.
7. Implement the I-710 Livability Plan for the Long Beach Freeway.
8. Implement the Mobility Element capital improvements for the Bixby Knolls community including:
   - Atlantic Avenue Streetscape Enhancements.
   - Wardlow Road Corridor Improvements.
   - Intersection Improvements.
   - Improved Connectivity to freeways and regional transit systems.
   - Dominguez Gap Bike and Pedestrian Bridge.
9. Complete the focused study for reuse of the former C-17 manufacturing facility in a comprehensive, inclusive manner in partnership with the community. This study should include adjacent employment generating land-uses and may result in further refinements to the PlaceTypes and allowed land-uses along Spring Street, Cherry Avenue, and Wardlow Road.

Map LU-23
Bixby Knolls

Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Police Station
- Fire Station
- Park
- School
- Water/Drainage
- Metro Rail
- Railroad

Map Not to Scale

Westside and Wrigley

Context. Seven neighborhoods make up the Westside and Wrigley Community Plan Area, see Map LU-24. Primarily consisting of modest single-family homes developed between 1920 and 1940, the area historically housed working class families with jobs in nearby ports or industrial areas. The former U.S. Navy housing site is now occupied by a full-service homeless and transitional housing facility, a high school and middle school, a police station and a business park. Commercial uses are concentrated on Pacific Coast Highway, Pacific Avenue and Willow Avenue, and more sporadically located along Long Beach Boulevard, Wardlow Road and Santa Fe Avenue. Long Beach Memorial Medical Center has a large hospital and medical office campus south of Spring Street between Long Beach Boulevard and Atlantic Avenue. The Metro Blue Line passenger rail runs along to the east. The area is defined by strong edges – located south of the I-405 San Diego Freeway, north of Pacific Coast Highway, east of the City of Los Angeles industrial strip, west of the City of Signal Hill, and divided down the middle by the I-710 Long Beach Freeway and the Los Angeles River.

Issues/Needs. Schools are abundant and serve the community well. A police station and a fire station are located on Santa Fe Avenue. A public library is also sited nearby on Willow Street. Over the years this area has seen some property maintenance issues, in both residential and commercial situations. Many homes and apartment buildings are of older vintage; some were poorly constructed and have not aged well and now need to be either rehabilitated or replaced altogether. Neighborhood and community serving retail uses are still needed, especially full-service grocery stores, clothing shops, furniture stores, and the like. Oil extraction/processing sites and horse boarding properties should be redeveloped to more residentially-compatible uses. Noise and air quality impacts from the intermodal railroad yards and trucking operations immediately next door continue to challenge the Westside. The I-710 Long Beach Freeway expansion proposal, to accommodate more port trade, concerns both communities. The South Wrigley and Arlington neighborhoods are designated as parking-impacted areas in the Mobility Element of the General Plan. Parks, usable open space and recreation areas are very much needed in each of these seven neighborhoods, most conspicuously in South Wrigley.

Land Use Strategies.

1. Provide vigorous code enforcement to protect the housing stock and prevent deterioration of the neighborhoods.
2. Consolidate the intensity of commercial activity along Pacific Coast Highway, Willow Street, Pacific Avenue and Long Beach Boulevard.
3. Finish developing and adopt new design guidelines and standards for the Transit-Oriented Development PlaceTypes along the Blue Line.
4. Maintain the hillside topography of the Wrigley and Memorial Heights neighborhoods.
5. Create a landscaped, open space buffer between port-related industrial operations (e.g., ICTF and SCIG railroad yards, trucking and container storage facilities) and neighborhoods on the Westside.
6. Uses allowed in the Edison and Union Pacific Railroad utility rights-of-way must be designed to have minimal dust, noise, traffic, visual and other nuisance impacts on residential neighbors. These properties shall be screened with landscape (green) buffers and proactively maintained.
7. Implement the RiverLink Plan for the Los Angeles River to create opportunities for additional recreation and green areas in each neighborhood.
8. Implement the I-710 Livability Plan for the Long Beach Freeway as part of the I-710 Corridor Project.
9. Implement the Mobility Element capital improvements for the Westside and Wrigley Community Plan Area including:
   - Implement the Green TI Terminal Island Transition Plan to improve the land-use compatibility along the Terminal Island Freeway right-of-way between Pacific Coast Highway and Willow Street.
   - Implement streetscape improvement projects from the North Long Beach Street Enhancement Master Plan and the Central Long Beach Strategic Guide for Development (created under the former Redevelopment Agency).
   - Hill Street Bicycle and Pedestrian Bridge.
   - Del Mar Greenbelt.
   - Santa Fe Avenue Streetscape Enhancement.
   - Intersection improvements.
   - Delta Avenue Bicycle Boulevard.
   - Magnolia Avenue Signal Improvements.
   - Multi-modal connectivity to Blue Line stations.
   - Bicycle facility improvements per the Bicycle Master Plan.

10. Improve quality of life, health and overall livability through the implementation of the West Long Beach Livability Implementation Plan.
11. Respect and maintain the equestrian uses within Wrigley Heights and promote shared use and maintenance of the area trail system.

Map LU-24
Westside and Wrigley

Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Fire Station
- Police Station
- Train Station
- Park
- School
- Water/Drainage
- Metro Rail
- Railroad
- Historic District Boundary

Map Not to Scale

Eastside

Context. Twelve neighborhoods make up the Eastside of Long Beach, see Map LU-25. The vast majority of the community is made up of single-family homes, developed in suburban tracts, during the zenith of automobile-oriented planning. The land use pattern consists primarily of long blocks in a flat terrain grid pattern, featuring wide major and minor avenues that funnel traffic from local and collector streets throughout the vicinity. The I-405 San Diego Freeway bisects the community, and the I-605 San Gabriel Freeway and the San Gabriel River runs along the eastern boundary. Multi-family housing is limited to a handful of locations, around the California State University at Long Beach (CSULB) and in Lakewood Village. Three regional-serving facilities anchor the Eastside. Situated on 61 acres of land straddling Carson Street at Clark Avenue, Long Beach City College is currently undergoing a renaissance with new buildings to serve its growing population. The campus of CSULB is 322 acres with an enrollment of 37,500 students as of 2015. Next door is the 103-acre Veterans Administration Medical Center facility providing health care services to thousands of veterans. Located east of CSULB and the Medical Center is the Historic Rancho Los Alamitos, and the Bixby Hill neighborhood which was originally dubbed "pill hill" because it housed the township's earliest physicians. Lakewood Village at the northeast corner of the Eastside developed with small-scale "plant housing" for workers employed in the aircraft manufacturing industry by the nearby Douglas Aircraft (now Boeing). The distinctive Cliff May homes, developed for enjoying the "California lifestyle" back in the 1950s, are located in El Dorado Park West. Four large-scale shopping centers serve the area; and lesser commercial strips and nodes are found along Pacific Coast Highway, the Los Coyotes Diagonal and at key intersections. Los Angeles County drainage channels traverse the area and power line easements run along the river's edge. Bus service is provided between major activity centers, a bus hub is located at CSULB, and both commuter and recreational bicycle routes serve the community.

Issues/Needs. The Eastside is well-served by schools, libraries, police and fire facilities. Recreation open space in the community is abundant, although more neighborhood-focused park space is desirable as much of the existing public open space is devoted to golf and sports fields. "Mansionization", the construction of out-of-scale single-family homes, has led to overdeveloped parcels and has left little open space. What is needed are greater design controls and higher standards to ensure that remodels of existing homes and insertions of new developments are attractive, composed of quality materials, and compatible with neighboring uses and structures. Although shopping opportunities are fairly good for Eastside residents, most centers are too far to walk to for residents and are highly automobile-oriented in design. Vehicular traffic moves well throughout the area; however, it is often at the expense of other modes of travel, namely pedestrians and bicyclists. In the future, a better multi-modal balance is called for. Traffic will need to be calmed and controlled so residents feel safe to walk or ride their bicycles for short trips or daily exercise. Lack of street trees along many streets detracts from the Eastside's walkability and attractiveness. Many aging street trees need to be replaced.

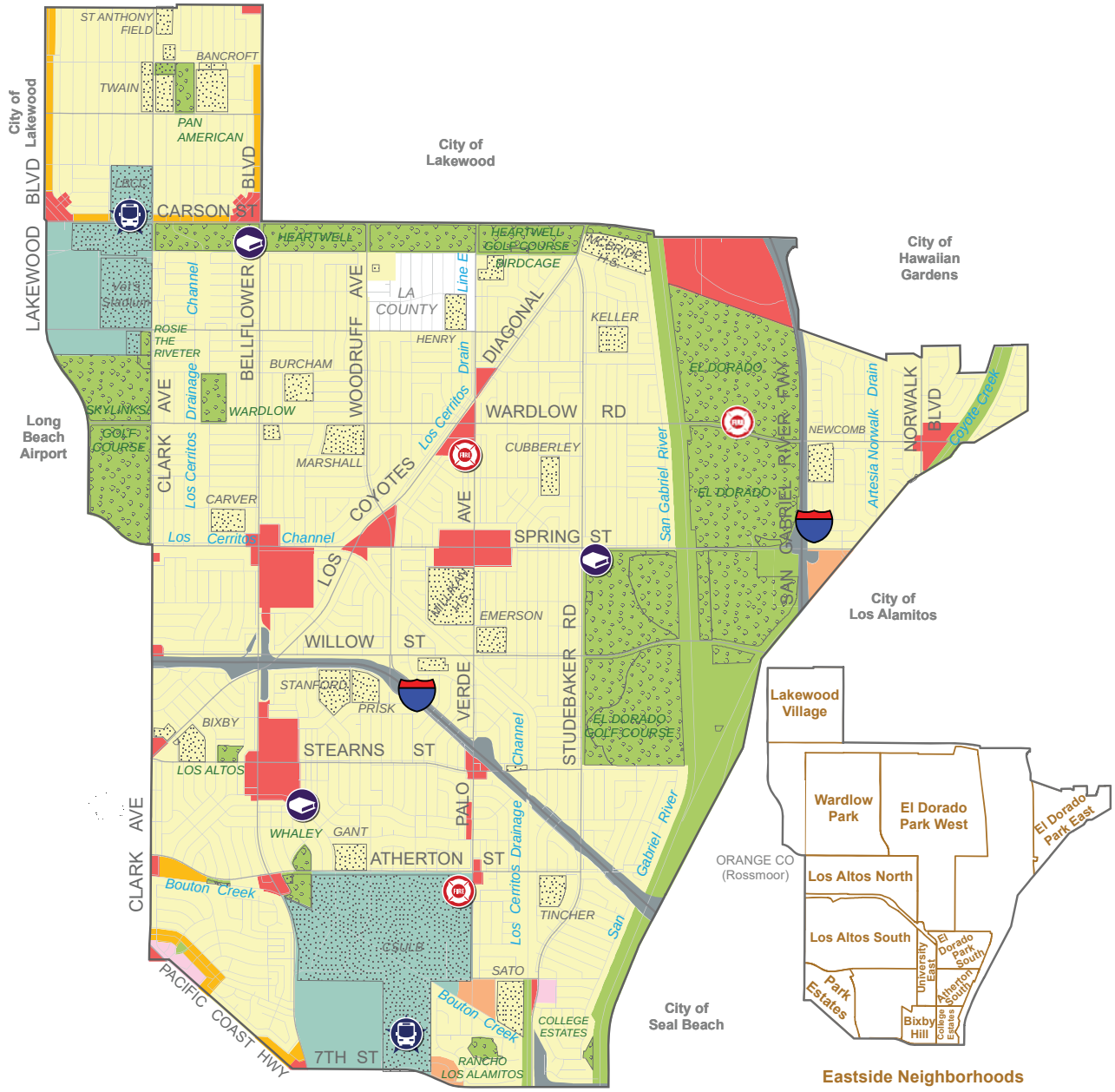
Land Use Strategies.

1. Provide vigorous code enforcement to protect the housing stock and prevent deterioration of the neighborhoods.
2. Develop new single-family design guidelines and standards to implement the Founding and Contemporary Neighborhood PlaceType.
3. Develop new design guidelines and standards to implement the Neighborhood-Serving Centers or Corridors PlaceTypes.
4. Direct future multi-family development to existing locations and locations served by public transit, especially near regional-serving sites.
5. Improve streetscapes and the design of commercial sites to promote greater walkability in commercial activity centers and shopping nodes that are adjacent to residential neighborhoods.
6. Maintain public services and facilities and continue providing locations for schools, parks, libraries, public safety, shopping and other community-serving uses.
7. Continue to support the regional-serving missions of Long Beach City College, CSULB, the Veteran's Administration Medical Center, and employment opportunities near the airport. Require master plans to ensure quality development and improved community-connectivity for each of these areas.
8. Seek opportunities to create additional neighborhood-serving recreation open space, community gardens and other green areas. Study and plan for possible future recreation opportunities along the Los Cerritos Drainage channels, at public and private school recreation facilities, under utility line corridors and on remnant parcels of land that

should not be developed with buildings.

9. Continue to work closely with the San Gabriel River and Mountains Conservancy and others to protect, restore and enhance the San Gabriel River and Coyote Creek and their recreation and wildlife amenities.
10. Finish the City's urban forestry inventories then develop and implement tree planting, maintenance and greening plans which are coordinated with citywide air quality improvement, greenhouse gas reduction, and local water-saving landscape plans and programs.
11. Keep providing economic incentives for people to convert high-water consumption landscapes to water-saving landscapes such as native and low-water gardens.
12. If the Los Angeles County island of homes and businesses between Woodruff Avenue and Palo Verde Avenues is annexed into the City, consider designating the properties as Founding and Contemporary Neighborhood PlaceType.
13. Over time, transform the Eastside into a much more pedestrian- and bicycle-friendly community by planning and implementing safe, efficient walking, bicycling and transit access and connectivity within neighborhoods and to the surrounding community. Implement Mobility Element capital improvements for the Eastside, including:
    - Improve the transit hub at CSULB.
    - Develop a new transit hub at City College.
    - Reconfigure Studebaker Road at the I-405 Freeway to improve access and reduce neighborhood intrusion.
    - Make freeway entrance improvements at Studebaker Road and 7th Street.
    - Make intersection improvements at Bellflower Boulevard and Stearns Street; Bellflower Boulevard and Atherton Street; Palo Verde Avenue and Stearns Street; and at the Los Coyotes Diagonal intersections on Studebaker Road and Carson Street.
    - Make signal improvements at Atherton Street and Palo Verde Avenue.
    - Make improvements to Spring Street and the I-605 Freeway ramp to improve freeway access and reduce neighborhood intrusion.
    - Widen the Spring Street Bridge over the San Gabriel River.
    - Make bicycle facility improvements per the Bicycle Master Plan.

Map LU-25
Eastside



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Fire Station
- Future Transit Hub
- Transit Hub
- Park
- School
- Water/Drainage

Map Not to Scale

Central

Context. The Central area of Long Beach consists of three neighborhoods: Central Area East, Central Area West and Washington School, see Map LU-26. Both Central Area East and Central Area West neighborhoods are challenged by an assortment of incongruous uses that were developed early in the City's history and under permissive zoning. The Washington School neighborhood is predominantly multi-family residential buildings with a number of institutional and social service providers, and is immediately adjacent to the Magnolia Industrial District. Many of the corridors that traverse the Central area exhibit a hodgepodge of commercial, institutional and residential uses. Although the majority of land outside of the Washington School neighborhood is developed with single-family homes, there are a large number of multi-family structures of various types and densities found throughout the Central Area East and Central Area West neighborhoods. Central includes the Metro Blue Line light rail route along Long Beach Boulevard, three historic districts, the 30-acre Pacific Coast Campus of Long Beach City College, the "Cambodia Town" commercial strip along Anaheim Street, and the unique Zaferia light industrial/creative district near Orizaba Park. The Long Beach Polytechnic High School campus and a number of public elementary and middle schools are located in the Central area. Eight parks, Chittick Field, two fire stations and two libraries serve the area. Youth, families, and ethnic diversity characterize the population. The Central area lies south of Pacific Coast Highway, north of 10th Street, between the Los Angeles River and Redondo Avenue, adjacent north and northeast of downtown.

Issues/Needs. The Central area exhibits some serious land use issues. Developed before zoning existed, and afterwards developed with very lenient zoning standards, these neighborhoods are challenged by an inconsistent pattern of land uses, some incompatible land uses, and a limited supply of recreational open space. Major and minor rehabilitation is needed for much of the housing stock, and many commercial sites and buildings need attention as well. Marginal retail strips with trampled landscapes and neglected building façades become a blighting influence inviting crime to these neighborhoods. Although improvements have been made in the last few years, a severe shortage of recreation open space persists in the Central area.

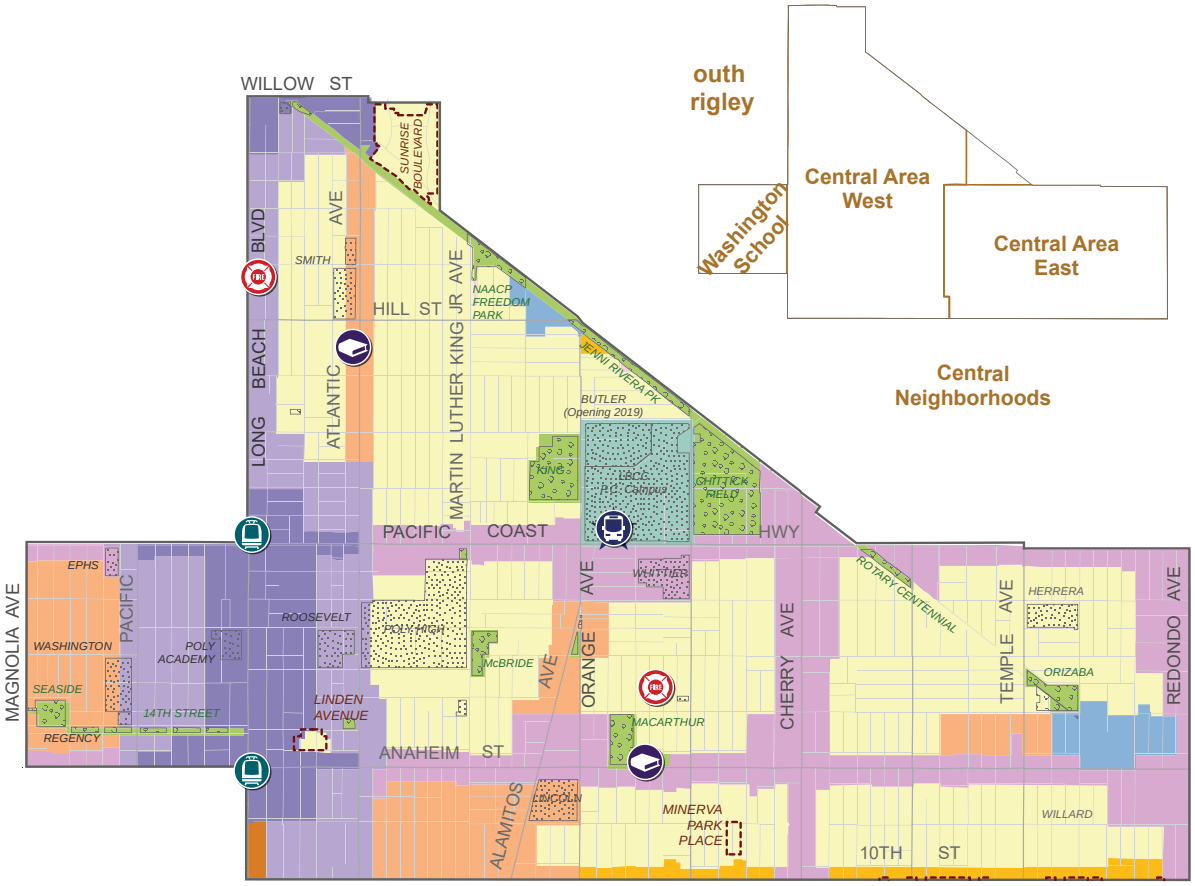
Land Use Strategies.

1. Provide vigorous code enforcement to protect the housing stock and prevent deterioration of the neighborhoods.
2. Develop new single-family design guidelines and standards to implement the Founding and Contemporary Neighborhood PlaceType.
3. Direct future multi-family developments to locations along light rail and other public transit routes, especially near and between regional-serving centers and major activity centers.
4. Promote residential and mixed use infill developments that support bus or trolley transit along Anaheim Street, Alamitos Avenue, Atlantic Avenue, 10th Street, Cherry Avenue and Redondo Avenue.
5. Develop and adopt design guidelines and zoning standards to implement the Transit-Oriented Development PlaceTypes.
6. Create additional neighborhood-serving recreation open space, parks, community gardens, trails, plazas and similar areas.
7. Work collaboratively with the Midtown and East Anaheim Business Improvement Districts to enhance the Anaheim Street corridor through beautification initiatives, cultural programming, branding and promotion campaigns, development of vacant parcels and redevelopment of underutilized sites.
8. Develop new design guidelines and standards to implement the Neighborhood-Serving Centers or Corridors-Moderate PlaceType.
9. Convert Zaferia's industrial land uses to Neo-Industrial to promote industries that are more environmentally compatible with the residential character of the surrounding neighborhoods.
10. Utilize strategies outlined in the Central Long Beach Strategic Guide for Development , Central Long Beach Design Guidelines, and the Atlantic Avenue Master Plan (adopted by the former Redevelopment Agency) to improve the Central area.
11. Implement Mobility Element capital improvements for the Central Area neighborhoods including:
    - » Armory Park & Street Realignment Project.
    - » Intersection Improvements.
    - » 10th Street Signal Improvements.
    - » Cherry Avenue Signal Improvements.
    - » Alamitos Avenue Corridor Improvements.
    - » Atlantic Avenue Beautification .
    - » Create 15th Street, Junipero Avenue and Orizaba

Avenue Bike Boulevards.

» Other Bicycle Facility Improvements per the Bicycle Master Plan.

Map LU-26
Central



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Future Transit Hub
- Fire Station
- Train Station
- Park
- School
- Water/Drainage
- Metro Rail
- Railroad
- Historic District Boundary

Map Not to Scale

Traffic Circle

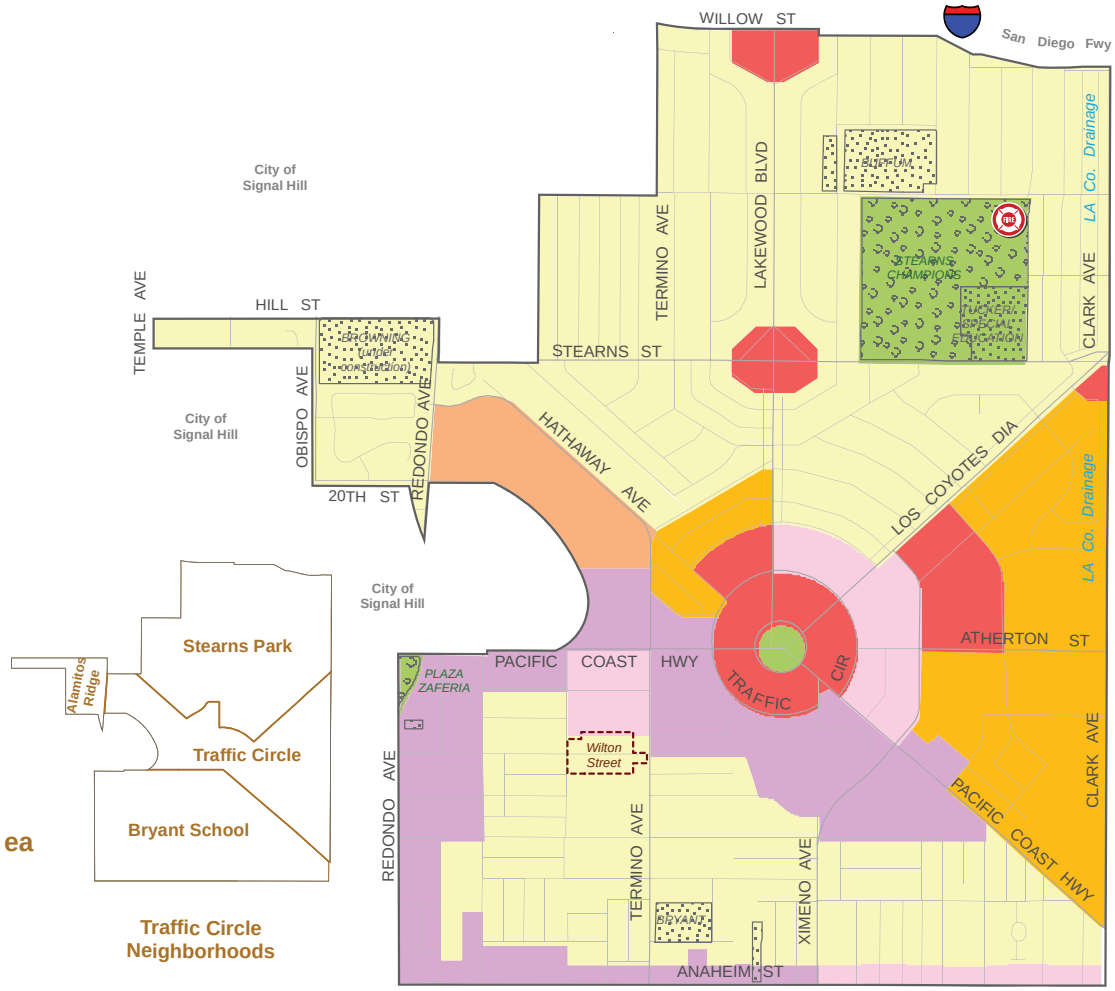
Context: Four neighborhoods comprise this community planning area: Alamitos Ridge, Stearns Park, Bryant School and Traffic Circle, see Map LU-27. Named for its distinguishing feature, a traffic roundabout of major proportions, this circle brings together Pacific Coast Highway, Lakewood Boulevard, the Los Coyotes Diagonal and several other local streets. Thousands of vehicles come through the traffic circle daily. The inner traffic circle is composed of auto-oriented commercial uses, while the outer traffic circle is more mixed-use and walkable. The outermost areas beyond the traffic circle are developed, for the most part, with residential uses. The Alamitos Ridge neighborhood is a newer, gated subdivision of single-family homes and is home to the Richard D. Browning High School opened in 2017. The Stearns Park neighborhood north of the Traffic Circle includes two neighborhood shopping nodes, two public elementary schools (Charles A. Buffum and Benjamin F. Tucker), Stearns Champion Park, and modest single-family homes built in the 1940s and 1950s. The central Traffic Circle neighborhood has newer townhomes along Hathaway Avenue, and higher density apartment buildings and apartment complexes between the Los Coyotes Diagonal, Clark Avenue and Pacific Coast Highway. The Bryant School neighborhood south of the Traffic Circle was constructed in the 1920s and 1930s. It includes Community Hospital, mixed commercial and residential uses along Redondo Avenue and along Anaheim Street, Bryant Elementary School, and the Wilton Street historic district. The Traffic Circle community planning area is bounded on the north by the I-405 San Diego Freeway, on the south by Anaheim Street, on the west by Redondo Avenue and on the east by Clark Avenue and the Los Cerritos drainage channel.

Issues/Needs: The Traffic Circle neighborhoods are well-served by automobile-oriented commercial centers and strips, but for the most part it is not a pleasant stroll for nearby residents to access shops and businesses on foot. Traffic moves very quickly and streets are wide, making it difficult for bicycles and pedestrians to cross busy intersections. Shopping at the core of the area should be made pleasant to reach on foot or bicycle for nearby residents. Maintenance of homes and yards in the Stearns Park and Bryant School neighborhoods has been an issue for some property owners; constant vigilance is needed to ensure all properties are well kept. Police, fire and schools adequately serve the community, but no public library exists here. Furthermore, recreation open space is limited to just Stearns Park and Plaza Zaferia. With new residents from the construction of Alamitos Ridge and a greater population anticipated in the future, additional recreation open space is needed in this community.

Land Use Strategies.

1. Provide vigorous code enforcement to protect the housing stock and prevent deterioration of the neighborhoods.
2. Develop new single-family design guidelines and standards to implement the Founding and Contemporary Neighborhood PlaceTypes.
3. Direct future multi-family developments to existing locations and locations served by public transit, especially near regional-serving centers.
4. Promote infill developments that support bus transit around the Traffic Circle, along Pacific Coast Highway and along Redondo Avenue.
5. Promote the creation of high-quality multi-family housing in the Traffic Circle neighborhood. Housing should serve a variety of family types with a diversity of housing types, sizes, and configurations. New housing should promote walking to nearby goods and services, as well as area schools, universities and employment centers. Careful attention should be taken to design the compliments walking and transit use as well as materials that remain durable and attractive during the building's lifetime.
6. Develop new design guidelines and standards to implement the Neighborhood-Serving Centers r Corridors-Moderate PlaceType.
7. Seek opportunities to create additional neighborhood-serving recreation open space, community gardens, trails, plazas and similar areas.
8. Implement Mobility Element capital improvements for the area, including:
   - » Redesign of traffic circle at Pacific Coast Highway to reduce the radius, slow speeds, and create bypass lanes.
   - » Intersection improvements on Redondo Avenue at Anaheim Street and at Pacific Coast Highway.
   - » Creation of a bicycle boulevard on 15th Street.

Map LU-27
Traffic Circle



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Fire Station
- Park
- School
- LA Co. Drainage
- Historic District Boundary

Map Not to Scale

Downtown

Context. Six neighborhoods make up the Downtown Community Planning Area: Willmore City, West Gateway, North Pine, Promenade, East Village, and Downtown Shoreline, see Map LU-28. These neighborhoods north of Ocean Boulevard constitutes the historic heart of the city. Historic Willmore City is the second tract of homes developed in Long Beach. Downtown developed along the Pacific Red Car passenger rail line that extended from Los Angeles down the coast to Orange County. The square block patterns found in downtown Long Beach above Ocean Boulevard are half the size of automobile-oriented blocks predominate in latter developments; and the cross block alleys also contribute greatly to the walkability of these older neighborhoods. In addition to the residential neighborhoods, Downtown offers a wide variety of commercial, institutional, cultural and retail uses, and has the City's largest concentration of tall office and residential towers, especially along the shoreline. So many new low- and mid-rise apartment and condominium buildings have been constructed in the downtown over the 25 years that the population has doubled to approximately 30,000 residents. In the East Village, an arts district has begun to emerge. First Street at Linden Avenue has new sidewalk dining areas and improved landscaping and lighting. Pine Avenue thrives as a restaurant row, anchored on the south end by the Queensway Bay retail, restaurants, and entertainment uses, located across from the Long Beach Convention and Entertainment Center. New multi-family structures with ground-floor commercial uses line the North Promenade. The Streets, formerly City Place, is a shopping that occupies 23 acres between Third and Sixth Streets, Pine Avenue and Long Beach Boulevard. Additional retail, businesses, personal and professional services are located throughout Downtown, many within comfortable walking distance to nearby residences.

Facilities and Services: The New Long Beach Civic Center Projects will construct a new City Hall, Central Library, Harbor Department Headquarters, public park and open-space as well as future private development such as office and residential uses. The Civic Center complex will serve as a focal and gathering space within the downtown community.

Traditional public and charter-approved schools in the downtown include Edison, Stevenson, Chavez and International elementary schools; Constellation Middle School; a new K-12 school; Renaissance and Poly Academy for Accelerated Learning high schools. Several private and religiously-affiliated schools, including St. Anthony High School, are found Downtown. Historic-designated religious buildings include the Scottish Rite Cathedral, St. Anthony Church, the Second Church of Christ Scientist, and the First Congregational Church.

Downtown is the City's premiere transportation hub and has seen improvements in the quality of its multimodal infrastructure. Renovations to the Transit Gallery on First Street included new public restrooms, bus information kiosks, solar powered digital readers with real time bus displays, seating benches, drinking fountains, shade canopies and public art installations. An upgraded Downtown Bike Station continues to serve bicycle commuters with affordable storage, repair and comfort facilities, conveniently located near the Transit Gallery; and bicycle routes and racks are now found throughout Downtown.

With community gardens, traditional parks, dog parks, a lagoon park and urban plaza spaces, it is estimated that about 65 publicly-owned acres of parkland exist within the boundaries of the Downtown Community Planning Area, as of 2015. The mouth of the Los Angeles River fronts Downtown, and the Pacific Ocean lies just beyond.

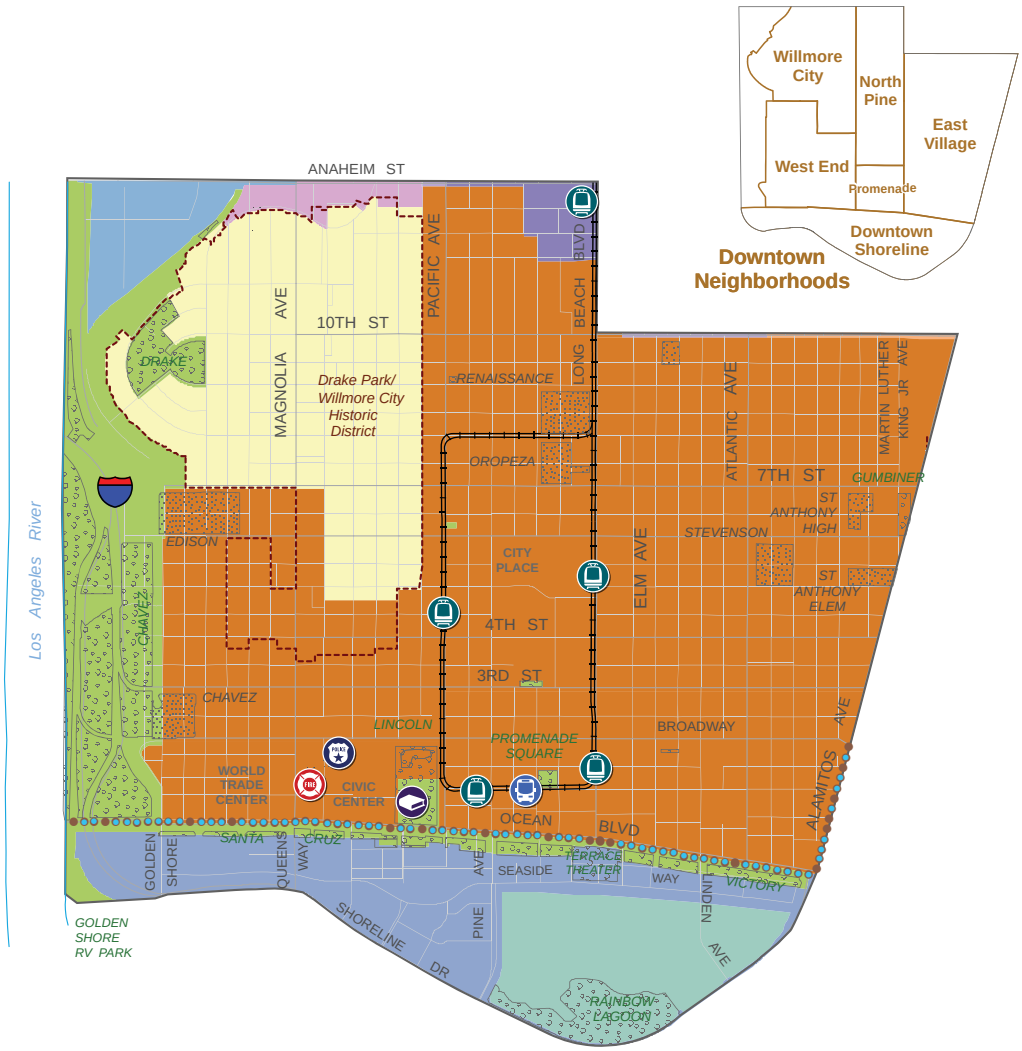
Issues/Needs. Downtown Long Beach has been systematically transformed from the blighted and beleaguered community it was 30 years ago. Where there was once a tired amusement park on the shore, a deteriorating and enclosed Downtown shopping mall, and struggling businesses on Pine Avenue — a revised street pattern and revitalized streetscapes, the opening of the Metro Blue Line light rail and new mixed use multi-family buildings with commercial shops on the ground floor — have breathed new life into the City's historic core. Specific projects have made the transformation of the Long Beach waterfront Long into a desirable destination: the completion of Queensway Bay harbor, the construction of the Rainbow Harbor Esplanade, the opening Aquarium of the Pacific, redevelopment of the properties along the Queen Mary side of the river (southside), and the conversion of the tidelands and Pike properties into retail, entertainment and multi-family housing developments. Yet even more upgrades are needed. The Downtown Shoreline and Promenade neighborhoods offer, for the most part, entirely new places to live. Many new Long

Beach residents now inhabit the West Gateway, North Pine and East Village. Unfortunately, the amount of usable public open space has not been added to keep pace with steady growth. Better connectivity to the shoreline, the river, and between neighborhoods to Downtown attractions and activity centers is needed. As studies indicate the popularity of convenient, walkable urban environments, Downtown is strongly positioned create an enjoyable urban living experience with its array of urbanized features — its shorter block sizes, warm climate and urban venues. As a corollary to its burgeoning urban identity, strategies for Downtown include reestablishing and reinforcing the movement of people on foot, bicycle and transit.

Land Use Strategies.

1. Keep Downtown Long Beach as the heart of the City by continuing to offer land areas for a wide variety of residential, commercial, office, institutional, civic, recreational and cultural venues.
2. While maintaining neighborhood cohesiveness and walkability, allow the downtown area to continue to grow and change over time, offering a vibrant mix of day and evening activities for both residents and visitors to enjoy.
3. Continue to utilize tidelands funds to upgrade and maintain public resources along the coast including seawalls, marinas, bluffs and beaches, parking lots and restrooms.
4. Create additional parklands and open spaces to serve downtown residents and visitors through the creation of additional natural and open spaces along the Los Angeles River and through reconfiguration of freeway lanes, ramps and bridges adjacent to the west side of Downtown.
5. Implement the RiverLink Plan to improve access and recreational and wildlife habitat amenities along the Los Angeles River.
6. Allow the Magnolia Industrial Group district to transition from traditional industrial uses to neo-industrial uses which encourage building reuse and allow for the possible introduction of live/work units for artists, inventors, designers and creative entrepreneurs.
7. Continue to implement the Downtown Plan (2012) and anticipate that most changes here will occur in the areas surrounding the Metro Blue Line fixed rail route. The Downtown and Transit-Oriented Development (TOD) PlaceTypes recommended in this land use plan encourage higher density infill developments and taller buildings appropriate in walkable, transit-connected urban centers.
8. Implement the Historic Preservation Element and continue protecting the Drake Park/Willmore City Historic District and all designated historic landmarks in the Downtown Community Planning Area. Utilize the provisions of the Adaptive Reuse Ordinance to continue to preserve historic and cultural resources throughout the City.
9. Implement Mobility Element capital improvements to continue transforming the Downtown Community Planning Area into the most walkable, bikeable and transit-connected neighborhoods in the City through ongoing street and alley, parkway and sidewalk improvements. Reconfigure roadways, especially Alamitos Avenue, to better accommodate multi-modal (pedestrians, bicycle and transit) users. Other specific recommendations are:
   - » Make bicycle facility improvements per the Bicycle Master Plan including: improved bicycle and pedestrian connections to the Los Angeles River and improved bicycle access on Alamitos Avenue and Ocean Boulevard.
   - » Explore reopening the historic Jergins Trust pedestrian tunnel.
   - » Continue implementing the Pine Avenue Streetscape Enhancement Project.
   - » Implement Alamitos Avenue corridor improvements.
   - » Implement Magnolia Avenue signal improvements.
   - » Implement 10th Street signal improvements.
   - » Implement Atlantic Avenue Beautification Program.
   - » Realign the I-710 Freeway terminus.
   - » Implement the pedestrian master plan for the Downtown and TOD (transit-oriented development) areas.
   - » Create greater connectivity/walkability between the upper and lower shoreline, i.e., above and below Ocean Boulevard.

Map LU-28
Downtown



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Fire Station
- Police Station
- Train Station
- Transit Hub
- Park
- School
- Water/Drainage
- Metro Rail
- Railroad
- Coastal Zone Boundary
- Historic District Boundary

Map Not to Scale

Midshore

Context. The Midshore Community Planning Area is composed of five neighborhoods between Alamitos and Redondo Avenues, 10th Street and the Pacific Ocean, see Map LU-29. The quality heritage of the City's development of single-family homes and early apartment buildings is on display in Midshore. Primarily residential in makeup, Midshore includes eight local historic districts: Brenner Place and Lowena Drive are small, isolated gems, Carroll Park has a distinctive street pattern, Hellman Street Craftsman is known for its concentration of Craftsman bungalows, and Bluff Park, Bluff Heights, Rose Park and Rose Park South together form a large near-contiguous historic district area extending from 10th Street to Ocean Boulevard between Cherry Avenue and Redondo Avenue. Attractive housing and landscapes are significant contributors to the desirability of these coastal neighborhoods. The Midshore hosts the Long Beach Museum of Art and the Museum of Latin American Art, Long Beach Senior Center, a fire station, library, three public primary schools (Luther Burbank, Mann and Franklin Classical) and three city parks (Rose, Bixby and Bluff). Commercial uses are located primarily on 7th and 4th Streets; Broadway; and on Cherry Avenue, Redondo Avenue and Alamitos Avenue.

Issues/Needs. Properties further inland in Midshore have maintenance and other physical issues that require attention. Many of the properties closer to the shore or in the historic districts are in good condition due to careful maintenance and restoration. Midshore's earlier developments have narrow streets, shallow parcel depth, and limited off-street parking. Incompatible commercial land uses are interspersed with residential land uses, making for disjointed land use patterns and traffic friction along many street segments. In spite of these less-than-ideal conditions, these are highly desirable residential neighborhoods. Thus, protecting the integrity of older structures and maintaining the overall look and character of each of these places is an ongoing concern. Continual code enforcement and diligent enforcement of standards for historic preservation is necessary.

All but a handful of blocks in Midshore are designated "parking impacted" with insufficient on- and off-street parking to serve businesses and residents. Although many streets do not meet street width standards, other streets are excessively wide. Most sidewalks are adequate, but many crosswalks could be upgraded to facilitate safer pedestrian travel. Green and recreational open spaces are scarce within each of these neighborhoods, although those closest to the shoreline have the recreation amenities of the beach, Belmont Pier and Pacific Ocean. Coastal bluff erosion and sand replenishment along the beach strand continue to be problematic. Some streets that end above the bluff still need improvements, although beach signage and stairways down the bluff have been upgraded. Shopping for daily needs is convenient for most goods and services, however, residents are compelled to travel outside Midshore for larger purchases and for other shopping needs.

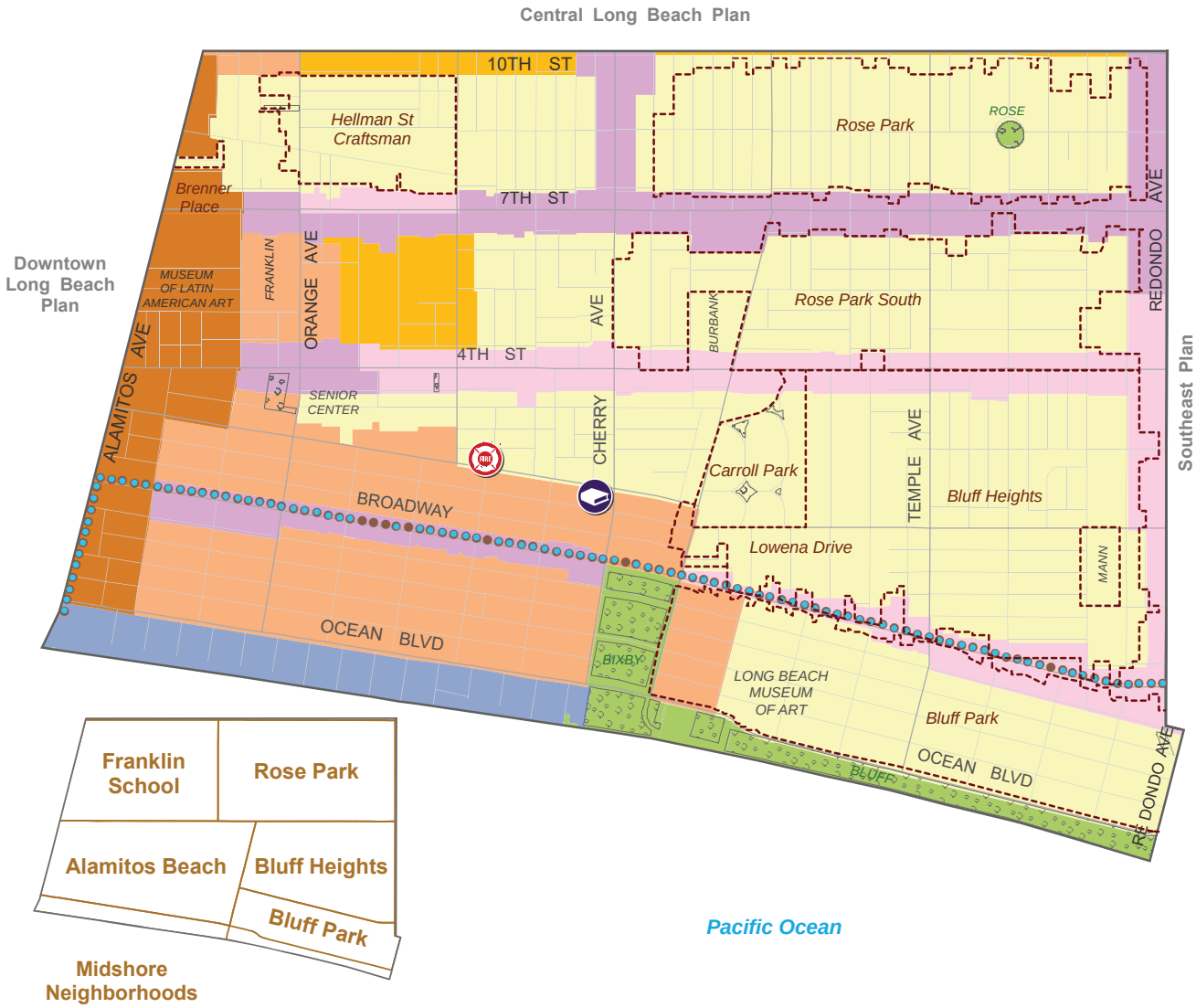
Land Use Strategies.

1. Maintain the unique and sound housing stock and character of each neighborhood using appropriate zoning and building standards, updated design guidelines, active code enforcement, community development programs and other appropriate measures. Respect the low scale of existing homes within the Founding and Contemporary Neighborhood PlaceType and ensure that new development is appropriate in terms of scale and massing in relation to its neighborhood context and PlaceType.
2. Expand housing opportunities for a diversity of residents and housing needs. Accommodate and promote new development and redevelopment of existing parcels as a way to increase the housing supply and replace multi-family housing developed with insufficient parking with new multi-family housing that includes adequate parking.
3. Continue to implement the Historic Preservation Element and conduct focused surveys to identify and create incentives to preserve potential landmark historic properties, particularly in the Alamitos Beach and Franklin School communities, as well as the 4th Street and Broadway corridors.
4. Develop new single-family design guidelines and standards to implement the Founding Neighborhood PlaceType and the Neighborhood Serving Center or Corridors PlaceTypes (Low and Moderate).
5. Direct future multi-family developments to locations near public transit routes, especially along 7th Street.
6. Continue to enforce the provisions of the Local Coastal Program for all properties within the coastal zone.
7. Continue to enforce the regulations for historic districts in the City. Should Mann or Burbank schools (adjacent to historic districts) be abandoned by the

State these properties shall be redeveloped to be compatible with the height, massing and design character of the adjacent historic district. Adaptive reuse of contributing historic buildings shall routinely be considered in planning and redevelopment of these sites/structures.

8. This plan encourages commercial and residential, horizontal and vertical, mixed-use buildings along five streets: Broadway, Redondo Avenue, 7th Street, 4th Street and the segment of Cherry Avenue between 7th Street and 10th Street. Where historic districts encompass properties along these streets the provisions of the historic districts take precedence.
9. This plan encourages the creation of greater parcel depth and larger parcel areas and allows development of three- to five-story, mixed-use and multi-family structures through the merging of lots fronting and/or behind the following streets: Redondo Avenue, 7th Street, 4th Street and segments of Cherry Avenue and Broadway.
10. In parking impacted areas adequate on-site parking must be provided by all development projects, regardless of the land use.
11. Create additional neighborhood-serving recreation open space, parks, community gardens, trails, plazas and similar neighborhood amenity areas in Midshore.
12. Implement the Mobility Element capital improvements for Midshore including:
    - Maintain alleys and pedestrian access ways to keep the area walkable.
    - 4th Street corridor improvements.
    - Cherry Avenue Signal Improvements.
    - 10th Street Signal Improvements.
    - Alamitos Avenue Corridor Improvements.
    - Bicycle facility Improvements per the Bicycle Master Plan.
    - Pedestrian improvements per the CX3 Pedestrian Master Plan.

Map LU-29
Midshore



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Fire Station
- Park
- School
- Coastal Zone Boundary
- Historic District Boundary

Map Not to Scale

Southeast

Context: The Southeast Community Plan Area neighborhoods in Long Beach are stable, well-maintained neighborhoods, largely composed of single-family homes and some predominantly multi-family residential neighborhoods. The neighborhoods of Recreation Park, Belmont Heights, Belmont Shore, Belmont Park, Naples Island and the Peninsula are founding neighborhoods emerged along the Pacific Electric (PE) Railway between 1920-1945 period. While PE has ceased operations, a segment of the remaining rail right-of-way is green space, a component of the citywide Long Beach Greenbelt. The neighborhoods of Alamitos Heights, University Park Estates and those within the Southeast Area Specific Plan (SEASP) were developed between 1945 -1980 and are considered contemporary neighborhoods, see Map LU-30. The Southeast contains three historic districts: Belmont Heights, some of Bluff Park, and Eliot Lane. The slightly hilly topography of Belmont Heights provides views of the Pacific Ocean, while the neighborhood of Alamitos Heights looks down upon Colorado Lagoon and Marina Vista Park. Attractive housing is occupied by renters and homeowners alike in these coastal neighborhoods. Abundant open space, coastal access, boat marinas, beach and waterfront recreational opportunities make this a very desirable locale. California State University at Long Beach is located just north of 7th Street; Wilson High, six public primary schools, two public libraries and three fire stations serve the community. Freeway access is convenient on 7th Street, and Studebaker Road and shopping opportunities for both locals and visitors are abundant along Redondo Avenue, 2nd Street and Pacific Coast Highway. Commercial storage and energy plants straddle the San Gabriel River to the northeast of the Los Cerritos Wetlands, and oil extraction still occurs within these degraded wetland habitats. Other notable destinations in the Southeast include the Belmont Pier and Pool Complex, Marine Stadium, Mother's Beach, and Alamitos Bay Landing. The SEASP area along PCH includes destination retail, big-box stores, hotels, single and multi-family housing, open space and recreation areas.

Issues/Needs. Most of the area below Broadway, 2nd Street and all of Naples Island is "parking impacted". Traffic congestion is elevated at the Iron Triangle where 7th Street, Bellflower and Pacific Coast Highway intersect, and also further down on the intersection of Pacific Coast Highway and 2nd Street. While the unique one-way streets and alley patterns in Belmont Shore are quaint and make for great walkability along Second Street, these narrow streets and small lots contribute to congestion and parking issues that contribute to friction between the residential neighborhoods and commercial businesses a few steps away. As 2nd Street is the only connector for Naples Island to the mainland, its transportation function cannot be overlooked. Likewise, Ocean Boulevard is the only road connecting the Peninsula to the mainland. Mobility is therefore a chief concern within the Southeast communities and should be considered in all future decision-making.

Land Use Strategies.

1. Maintain the unique and sound housing stock and character of each neighborhood using appropriate zoning and building standards, updated design guidelines, active code enforcement, community development programs and other appropriate measures. Respect the low scale of existing homes within the Founding and Contemporary Neighborhood PlaceType and assure that new development is appropriate in terms of scale and massing in relation to its neighborhood context and PlaceType.
2. Expand housing opportunities for a diversity of residents and housing needs. Accommodate and promote new development and redevelopment of existing parcels as a way to increase the housing supply and replace multi-family housing developed with insufficient parking with new multi-family housing that includes adequate parking.
3. Continue to implement the Historic Preservation Element and conduct focused surveys to identify and create incentives to preserve potential landmark historic properties, particularly within the 4th Street and Broadway corridors.
4. Where new infill development encourages greater density with the appropriate mix of commercial and residential uses, such as on Redondo Avenue, larger sites may need to be assembled in order to handle the transition from lower heights and smaller scales to greater heights and larger masses.
5. Promote multi-modal transportation through careful design. New development should facilitate the use of transit, bicycles and walking.
6. Maintain the high level of public resources and services, including schools, libraries, parks/recreation and public safety services, available to Southeast residents.
7. Continue to monitor and maintain the balance

between the commercial uses along 2nd Street and adjacent neighborhoods. Continue to address parking problems through a joint effort of City staff, the Belmont Shore Parking and Business Improvement Area Advisory Commission and neighborhood community groups. Maintain the character of Belmont Shore with consideration for the business mix, parking, traffic and overall quality of life.

8 . Continue to update and implement the provisions of the Local Coastal Program for the Southeast area and throughout the Local Coastal Zone in accordance with the State Coastal Act. Revise Planned Development District Ordinance for the Belmont Pier and Pool Complex (PD-2) to implement the provisions for the Waterfront and Regional-Serving Facility PlaceType for these areas.

9. Work with others to acquire for the public and rehabilitate for the wildlife the greatest amount of restorable wetland habitat remaining in the Los Cerritos Wetlands.

10. Enhance amenities in and increase access to the Belmont Pier and Pool Complex, Alamitos Bay Landing, Colorado Lagoon, Marine Stadium, beaches and marinas, and the Los Cerritos Wetlands.

11. Implement the Mobility Element capital improvements for the Southeast area including:
    - 2nd Street streetscape enhancements.
    - Connectivity enhancements at Pacific Coast Highway and 2nd Street.
    - Improvements to SR-22 freeway ramps at Studebaker Road.
    - Traffic signal Improvements.
    - Bicycle facility improvements per the Bicycle Master Plan.

12. Implement complete streets for the SEASP area including new bike and pedestrian improvements to the Pacific Coast Highway, 2nd Street, Marina Drive and Loynes Drive. Large superblocks should be broken-up to provide a circulation system of smaller internal streets and pedestrian walkways along the waterfront.

Map LU-30
Southeast

Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

- Library
- Fire Station
- Park
- School
- Water/Drainage
- Coastal Zone Boundary
- Historic District Boundary

Map Not to Scale

Administration

Maintaining the Land Use Element

6

"Discipline is the bridge between goals and accomplishment."

Jim Rohn
American entrepreneur, author and motivational speaker

6

Administration

Maintaining the Land Use Element

- Element Review, Amendment and Consistency 168
  - » Land Use Implementation Review 168
  - » Amendments to the Element 168
  - » Consistency 168

ELEMENT REVIEW, AMENDMENT, AND CONSISTENCY

In order for the Land Use Element to be most effective, the City must review, maintain and implement it in a systematic and consistent manner. This section outlines the review and amendment processes for the Land Use Element, and describes the consistency requirements for new development projects, plans and other approvals.

Land Use Implementation Review

The City is committed to regularly reviewing progress toward implementing the goals, policies and implementation measures of the Land Use Element. Since many of the factors and issues that the Element addresses change from time to time, a review and progress report that is prepared every two to three years will help ensure the City is moving forward to achieve the Land Use Plan's vision and bold moves. This review will describe the status of each specific implementation strategy outlined in the Implementation Chapter. The review will also take into account the availability of new implementation tools and feedback from monitoring activities.

Amendments to the Element

State law allows amendments to the Land Use Element. Amendments may periodically be initiated by City staff, the Planning Commission, City Council or a property owner. State-mandated elements, including the Land Use Element, can only be amended four times per calendar year. However, more than one change may be considered at each of these four opportunities.

Projects within the Coastal Zone may be appealable to the State Coastal Commission.

General Plan Amendments are adopted by resolution and approved immediately upon adoption of the resolution.

Consistency

To ensure that the goals, policies, citywide implementation measures and neighborhood strategies identified in this element are systematically implemented, State law requires that actions and decisions Long Beach approves must be consistent with this Land Use Element and the General Plan 2040. Following is a partial list of City initiatives that must be consistent with the Land Use Element:

- **Master plans**. A master plan proposal is considered consistent with this Land Use Element if it is consistent with the intent and direction of the PlaceType districts, and conforms to the density, intensity and height requirements for each PlaceType district.

- **Specific plans**. A specific plan proposal is considered consistent with this Land Use Element if it is consistent with the intent and direction of the PlaceType districts, conforms with the density, intensity and height requirements for each PlaceType district, and complements/is sensitive to the established physical environment and neighborhood setting within which the proposed plan is located.

- **Capital projects**. Project proposals and improvements identified in the Capital Improvement Program are considered consistent when they are consistent with (explicitly or implicitly) the Land Use Element policies. New infrastructure or capital projects shall be examined for consistency on the bases of their ability to implement the goals, objectives and policies of the Land Use Plan.

- **Planned development**. A planned development proposal is considered consistent with this Land Use Element if it is consistent with the intent and direction of the PlaceType districts, conforms to the intensity and density levels of the PlaceType districts, and complements/is sensitive to the established physical environment and neighborhood setting within which the proposed project is located.

- **Development agreements**. Development agreements for development projects are consistent with this Plan when they are consistent with the goals, objectives and policies of the Land Use Plan, and with the intent and direction of the PlaceType districts.

- **Subdivision approvals**. Proposed subdivisions are considered consistent when the density of the proposed subdivision meets the PlaceTypes residential density and commercial/industrial intensity. Condominium conversions of existing buildings that are greater than the allowed density under PlaceTypes are considered inconsistent, unless the Planning Commission makes findings that the proposed conversion is in the best interest of the City.

» **Development projects**. Proposed development projects that carry out the policies of the Land Use Element and fulfill the intent of the PlaceType density and intensity levels are considered consistent.

» **Design guidelines.** Design guidelines that carry out the policies of this Land Use Element and fulfill the intent of the PlaceType districts are considered consistent.

» **Environmental documentation**. Environmental documentation (including environmental impact reports and statements, mitigated and negative declarations and addendums) are considered consistent when the project approvals and findings conform with the goals and policies of this Land Use Element.

» **Zoning Regulations.** Long Beach's Zoning Regulations (Title 21 of the Municipal Code) must be made consistent with this Land Use Element, including consistency between PlaceTypes and Zoning Districts. However, since this General Plan (including the Land Use Element) is a long-range policy document, and zoning is sometimes a shorter-range means of incrementally reaching the long-range goals, there may be instances in which the immediate zoning case appears to be inconsistent with the Land Use Element. In such instances, a finding of consistency may be made by the Planning Commission providing it is determined that the proposed zoning or zoning change is an incremental step toward the ultimate realization of the policies of this Land Use Element, and that determining consistency will not foreclose the future possibility of attaining the goals of this Land Use Element.

Conditional Use Permits are consistent if the proposed project carries out the policies of the Land Use Element and meets the PlaceType density and intensity levels.

Variances found to not adversely affect the intent of PlaceTypes districts and otherwise comply with the Zoning Regulations are considered consistent.

Table LU-6 on the following page identifies the PlaceTypes and Zoning Districts that are consistent with each other.

The City intends to adopt new zoning regulations to better implement the PlaceTypes. Until such time, the matrix on the following page show correspondence between the PlaceTypes and current Zoning Districts.

Table LU-6: PlaceTypes and Zoning Districts Consistency Matrix

Zoning Districts		PlaceTypes													
		Open Space	Founding and Contemporary Neighborhood	Multi-Family Residential - Low	Multi-Family Residential - Moderate	Neighborhood-Serving Centers and Corridors - Low	Neighborhood-Serving Centers and Corridors - Moderate	Transit-Oriented Development - Low	Transit-Oriented Development - Moderate	Community Commercial Centers and Corridors	Industrial	Neo-Industrial	Regional-Serving Facility	Downtown	Waterfront
Residential Zones															
R-1-S	Single-family Residential, small lot	•													
R-1-M	Single-family Residential, moderate lot		•												•
R-1-T	Single-family Residential, townhomes		•												•
R-1-N	Single-family Residential, standard lot		•												•
R-1-L	Single-family Residential, large lot		•												•
R-2-S	Two-family Residential, small lot		•												•
R-2-I	Two-family Residential, intensified development		•												•
R-2-N	Two-family Residential, standard lot		•												•
R-2-A	Two-family Residential, accessory second unit		•												•
R-2-L	Two-family Residential, large lot		•												•
RM	Mobile homes, modular and manufactured residential		•	•	•									•	•
R-3-T	Multi-family Residential, Townhouse			•				•	•					•	•
R-3-S	Low-density Multi-family Residential, small lot			•				•	•					•	•
R-3-4	Low-density Multi-family Residential			•				•	•					•	•
R-4-R	Moderate-density Multiple Residential				•			•	•					•	•
R-4-N	Medium-density Multiple Residential				•			•	•					•	•
R-4-U	Dense Multiple Residential, urban							•	•					•	
R-4-H	Dense Multiple Residential, high-rise				•			•	•					•	•
Mixed Commercial/Residential Zones															
CNR	Neighborhood Commercial and Residential			•	•	•	•	•	•						•
CCR	Community R-4-R Commercial					•				•					•
CCN	Community R-4-N Commercial						•			•					
CO	Office Commercial					•	•	•	•	•			•	•	•

Zoning Districts		PlaceTypes													
		Open Space	Founding and Contemporary Neighborhood	Multi-Family Residential - Low	Multi-Family Residential - Moderate	Neighborhood-Serving Centers and Corridors - Low	Neighborhood-Serving Centers and Corridors - Moderate	Transit-Oriented Development - Low	Transit-Oriented Development - Moderate	Community Commercial Centers and Corridors	Industrial	Neo-Industrial	Regional-Serving Facility	Downtown	Waterfront
Commercial Zones															
CS	Commercial Storage						•			•					
CNP	Neighborhood Pedestrian-Oriented Commercial					•	•	•	•						•
CNA	Neighborhood Commercial Automobile-Oriented			•	•	•	•								•
CCA	Community Commercial Automobile-Oriented									•					•
CCP	Community Commercial Pedestrian-Oriented					•	•	•	•	•					•
CH	Highway Commercial									•					•
CT	Tourist and Entertainment Commercial							•	•	•			•	•	•
CHW	Regional Highway Commercial									•					
Other Zones															
IL	Light Industrial											•	•		
IM	Medium Industrial										•	•			
IG	General Industrial										•				
IP	Port-related Industrial												•		
I	Institutional	•	•	•	•	•	•	•	•	•	•	•	•	•	•
P	Park	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PR	Public Right-of-Way	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PD	Planned Development		•	•	•	•	•	•	•	•	•	•	•	•	•

Note: "•" indicates that PlaceType and Zoning District are consistent.

Appendix

7

"Destiny is not a matter of chance, but a matter of choice. It is not a thing to be waited for. It is a thing to be achieved."

William Jennings Bryan,
American lawyer, orator and presidential candidate

7 Appendix

» References.....174
» Glossary.....175
» Land Use Policies Addressing Climate Change and Sustainability.....182

ANTICIPATED BUILDOUT

California State law directs jurisdictions to accommodate their share of the regional housing need allocated by their council of governments. According to the General Plan Guidelines prepared by the Governor's Office of Planning and Research, jurisdictions should consider several factors in their forecasts and buildout scenarios, including population growth and trends, community and regional demographics, the local mix of jobs and housing, economic trends and infrastructure needs. Therefore, to best understand and accommodate for anticipated population and employment growth and demand for new housing units, this Element takes into account data from:

- Southern California Association of Governments (SCAG)
- California Employment Development Department (EDD)
- California Department of Finance (DOF) Demographic Research Unit
- Assessment of Fair Housing (AFH) conducted by the City for compliance with the U.S. Department of Housing and Urban Development (HUD)
- U.S. Census Bureau

The Regional Housing Needs Assessment (RHNA) for Long Beach is allocated by SCAG . According to SCAG, as of 2012 (the baseline year of this plan), Long Beach had over 466,255 residents, over 163,794 households and 153,154 jobs. The U.S Census American Community Survey five-year estimate reported 469,793 residents and 163,919 households in the City in 2016; additionally, the EDD estimates Long Beach had approximately 156,900 jobs in 2017. See Table LU-8, Population, Household and Employment Growth.

SCAG's Integrated Growth Forecast for the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy indicates that Long Beach will grow nearly four percent to a population of 484,485 residents by 2040. This represents over 18,000 new persons living in Long Beach. During this same time frame, the City is projected to add 11,700 new households and 28,500 new employees.

For the 2014-2021 Housing Element period, Long Beach had a RHNA target of 7,048 new housing units by 2021 to accommodate projected population growth. In addition to the need for housing for new households, the City's AFH analysis completed with data and direction provided by HUD shows that 12.2 percent of all households in Long Beach experience overcrowding. Though startling, this is not surprising given that since 1989, housing production lagged while population has continued to increase. Constrained housing supply spikes costs for residents while also directly leading to overcrowding. When housing costs rise, families combine, individuals delay living without roommates and families make sometimes detrimental decisions to remain housed.

Table LU-8: Population, Household and Employment Growth

	Population	Households	Employment
2012	466,255	163,794	153,154
2016[A]	469,796	163,909	156,900[B]
2020	478,346	170,838	165,800
2035	481,463	173,188	175,546
2040	484,485	175,538	181,665
Percent Change: 2012-2040	3.9%	7.2%	18.6%

Notes: A) 2016 data is provided for reference.
B) Employment data is for 2017.

Sources: SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), U.S. Census Bureau American Community Survey, City of Long Beach; and California Employment Development Department.

Given the negative health, economic, infrastructure and quality of life impacts of overcrowding, the 7,048-unit number was combined with the needed 21,476 units to address overcrowding within the total new unit threshold for the City. See Table LU-9, Anticipated Housing Needs.

The 2014-2021 Housing Element reported an average household size for owner-occupied units of 2.92 people and 2.74 people for renter-occupied units. Due to the lower average unit size and high renter share in the City (over 60 percent of units are renter-occupied), addressing overcrowding and increasing the number of available units are especially relevant for renter households.

As new data become available, the City will continue to analyze population, housing and employment projections and consider adjustments necessary to the General Plan.

Table LU-9: Anticipated Housing Needs

Units Needed to Address 12.2% Overcrowding (HUD)	21,476
RHNA (SCAG/HCD) units by 2021	7,048
Total Housing Units Needed	**28,524**
Downtown Plan Accommodated Growth	5,000
Midtown Plan Accommodated Growth	3,619
SEASP Accommodated Growth	2,584
Accessory Dwelling Units (100/year)	2,200
Total Already Accommodated Growth	**13,403**
Needed (LUE) Additional Housing Accommodation	**15,121**

Sources: Long Beach Assessment of Fair Housing, 2013 - 2021 Long Beach Housing Element; Long Beach Development Services staff analysis; and U.S. Department of Housing and Urban Development.

Acronyms: U.S. Department of Housing and Urban Development (HUD); California Department of Housing and Community Development (HCD); Southern California Association of Governments (SCAG); Regional Housing Needs Assessment (RHNA); Long Beach Assessment of Fair Housing (AFH); Land Use Element (LUE) and Southeast Area Specific Plan (SEASP).

NATURAL RESOURCE PROTECTION POLICIES

Per LU Policy 20-12, the policies, requirements, and standards below ensure minimization of potential development impacts.

Agricultural Resources
None required.

Biological Resources

1. Protect nesting bird species covered under the Migratory Bird Treaty Act (MBTA), Federal Endangered Species Act, California Endangered Species Act, or California Fish and Game Code.

a. In the event that vegetation and/or tree removal should occur between January and September in a portion of the City located outside of the Coastal Zone, a qualified biologist shall conduct a nesting bird survey prior to the commencement of construction activities.

b. As required by Coastal Development Permit (CPD) No. 5-08-187, in the event that tree trimming or removal should occur within the Coastal Zone, a qualified biologist shall conduct surveys and submit a report at least one week prior to the trimming or removal of a tree prior to commencement of construction and/or maintenance activities.

c. If an active nest is found, containing eggs or young of any avian species protected under the MBTA, Federal Endangered Species Act, California Endangered Species Act, or California Fish and Game Code, the qualified biologist based on their experience shall delineate an appropriate buffer area around the nest depending on the sensitivity of the species and the nature of the construction activity until the nest is no longer active.

2. Preserve and maintain City-owned trees through compliance with Chapter 14.28, Trees and Shrubs, of the City of Long Beach Municipal Code.

Cultural Resources

1. Minimize any potential impacts to unknown archaeological resources by ensuring appropriate treatment and documentation of the discovery in accordance with federal, State, and local guidelines, including those set forth in California PRC Section 21083.2.

2. Minimize any potential impacts to unknown paleontological resources by ensuring appropriate treatment and documentation of the discovery in accordance with federal, State, and local guidelines.

3. Minimize any potential impacts to unknown buried human remains by ensuring appropriate examination, treatment, and protection of human remains (in the event of an unanticipated discovery of a burial, human bone, or suspected human bone) as required by California Code of Regulations (CCR) Section 15064.5(e), PRC Section 5097, and Section 7050.5 of the State's Health and Safety Code, or as updated.

Geology and Soils

1. When required by Chapter 18.05 of the City's Municipal Code, and as a standard condition of approval prior to issuance of a grading permit, require that project applicants comply with the recommendations of a soils engineering report and/or engineering geology report prepared for the subject project.

2. As a standard condition of approval prior to issuance of a grading permit, that project applicants comply with the California Building Code.

Hazards and Hazardous Materials

1. Require, as a standard condition of approval prior to issuance of a demolition permit, verification by the Director of the City of Long Beach Development Services Department, or designee, that predemolition surveys for asbestos-containing materials (ACMs) and lead-based paints (LBPs) (including sampling and analysis of all suspected building materials) and inspections for polychlorinated biphenyl (PCB)-containing electrical fixtures have been performed if ACMs, LBPs, and/or PCBs have been identified and/or if there is a likelihood that these materials pose a hazard at the project site.

2. Require, as a standard condition of approval prior to issuance of a demolition permit, verification by the City of Long Beach Director of Development Services, or designee, that predemolition surveys for mold (including sampling and analysis of all suspected building materials) shall be performed if mold has been identified and/or there is a likelihood that mold poses a hazard at the project site.

3. Require, as a standard condition of approval prior to issuance of a grading permit, the City of Long Beach Fire Department (LBFD), or designee, to review and approve a Contingency Plan, or equivalent, that addresses the procedures to be followed should on-site unknown hazards or hazardous substances be encountered during demolition and construction activities.

Hydrology and Water Quality

1. Require, as a standard condition of approval prior to issuance of a grading permit for projects disturbing greater than one acre, that project applicants obtain coverage under and comply with the provisions of the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ; NPDES Permit No. CAS000002, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ; Construction General Permit), or subsequent permit. Project applicants shall provide the Waste Discharge Identification Number (WDID) to the City to demonstrate proof of coverage under the Construction General Permit. For projects disturbing between 1 and 5 acres of soil, project applicants may obtain a Small Construction Rainfall Erosivity Waiver in lieu of coverage under the Construction General Permit if it can be demonstrated that there is a low erosivity potential (i.e., the rainfall erosivity value in the Revised Universal Soil Loss Equation [R factor] is less than 5).

2. Require, as a standard condition of approval prior to issuance of a grading permit for projects that disturb soil, that project applicants submit an Erosion and Sediment Control Plan (ESCP) to the City of Long Beach Development Services Director, or appropriate designee, for review and approval, in compliance with the Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach (Order No. R4-2014-0024, NPDES No. CAS004003, as amended by Order No. R4-2014-0024; City of Long Beach MS4 Permit). Stormwater Pollution Prevention Plans (SWPPPs) prepared in accordance with the requirements of the Construction General Permit can be accepted as ESCPs

3. Should groundwater dewatering activities be required during construction and excavation activities, the project applicants shall obtain coverage under and comply with the provisions of the Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004) (Groundwater Discharge Permit), or subsequent permit. Project applicants shall provide the Waste Discharge Identification Number (WDID) to the City to demonstrate proof of coverage under the Groundwater Discharge Permit.

4. Require, as a standard condition of approval prior to issuance of a grading permit, that project applicants of New Development or Redevelopment projects (unless exempt) submit a Standard Urban Storm Water Mitigation Plan (SUSMP), or equivalent, to the City of Long Beach Development Services Director, or appropriate designee, for review and approval, in compliance with the Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach (Order No. R4-2014-0024, NPDES No. CAS004003, as amended by Order No. R4-2014-0024; City of Long Beach MS4 Permit), or subsequent permit.

5. Require, as a standard condition of approval prior to issuance of a grading permit, that project applicants of New Development or Redevelopment projects (unless exempt) submit a Low Impact Development (LID) Plan, or equivalent, to the City of Long Beach Development Services Director, or appropriate designee, for review and approval in compliance with Chapter 18.74, Low Impact Development Standards, of the City of Long Beach Municipal Code.

6. Require, as a standard condition of approval prior to issuance of a grading permit for projects located within a Federal Emergency Management Agency (FEMA) special flood hazard area, that project applicants obtain a development permit from the City of Long Beach Floodplain Administrator, or appropriate designee. Project applicants shall submit an application for the development permit to the Floodplain Administrator consistent with the requirements of Chapter 18.73.120, Establishment of Development Permits, of the City of Long Beach Municipal Code. Design and construction of projects located within a special flood hazard area shall comply with the requirements in Chapter 18.73, Flood-Resistant Design and Construction, of the City of Long Beach Municipal Code.

Mineral Resources
None required.

Recreation
None required.

LAND USE POLICIES ADDRESSING CLIMATE CHANGE AND SUSTAINABILITY

Through the Land Use Element, the City of Long Beach continues to be at the forefront of planning for climate change and sustainability. The Land Use Element includes policies that directly and indirectly address climate change by reducing greenhouse gas (GHG) emissions. GHG emissions will be reduced though implementation of policies that increase transit-oriented development and mixed-use development, increase active transportation, promote green technology and promote sustainable development.

These policies will also help the City achieve GHG emissions reductions that are consistent with mandated statewide goals. The Global Warming Solutions Act (Assembly Bill 32) established a goal of reducing statewide GHG emissions to 1990 levels by the year 2020. Executive Order S-3-05 established a statewide GHG emissions reduction target of 80 percent below 1990 levels by the year 2050. Subsequently, Executive Order B-16-2012 established a target of a 40 percent reduction below 1990 levels by the year 2030. Additionally, Senate Bill 375 (the Sustainable Communities Strategy) requires coordinated land use and transportation planning in order to reduce vehicle miles traveled for passenger vehicles.

The City strives to be a leader in advancing sustainability and this Land Use Element complements other City actions and planning documents that include policies to address global climate change, reduce GHG emissions, and adapt to change. The table below is an excerpt of the specific policies within the Land Use Element that address climate change.

Land Use Element policies directly addressing Climate Change are identified in Table LU-7.

7
Appendix

Table LU-7: Land Use Policies Addressing Climate Change and Sustainability

Policy Number	Policy	Page
Land Use Element policies directly addressing Climate Change: **Goal No. 1: Implement Sustainable Planning and Development Practices** **Strategy No. 2: Promote efficient management of energy resources to reduce greenhouse gas emissions and the impacts of climate change.**		
LU Policy 2-1	Promote the establishment of local green energy generation projects along with the infrastructure to support such projects.	111
LU Policy 2-2	Ensure that long-range planning processes consider impacts of sea level rise and propose mitigation measures.	111
Goal No. 4: Support Neighborhood Preservation and Enhancement **Strategy No. 10: Create healthy and sustainable neighborhoods.**		
LU Policy 11-2	Provide for a wide variety of creative, affordable, sustainable land use solutions to help resolve air, soil and water pollution, energy consumption and resource depletion issues.	118
Goal No. 6: Ensure a Fair and Equitable Land Use Plan **Strategy No. 15: Protect neighborhoods from adverse environmental conditions.**		
LU Policy 16-2	Continue to work with the State, the Port of Los Angeles and other agencies and organizations to improve air quality around the ports and reduce vessel, truck, rail and other equipment emissions from port operations.	121
Goal No. 8: Increase Access, Amount and Distribution to Green and Open Space **Strategy No. 17: Increase open space in urban areas.**		
LU Policy 18-4	Increase the number of trees, first prioritizing areas identified as tree-deficient, to provide the maximum benefits of improved air quality, increased dioxide sequestration, reduced storm water runoff and mitigated urban heat island effect.	122
Policies related to sustainable development, green technology, improving the environment, etc.: **Goal No. 1: Implement Sustainable Planning and Development Practices** **Strategy No. 1: Support Sustainable urban development patterns.**		
LU Policy 1-1	Promote sustainable development patterns and development intensities that use land efficiently and accommodate and encourage walking.	110
LU Policy 1-2	Support high-density residential, mixed-use and transit-oriented development within the downtown, along transit corridors, near stations and at neighborhood hubs.	110
LU Policy 1-3	Require sustainable design strategies to be integrated into public and private development projects.	110
LU Policy 1-4	Require electric vehicle charging stations to be installed in new commercial, industrial, institutional, and multiple-family residential development projects. Require that all parking for single-unit and two-unit residential development projects be capable of supporting future electric vehicle supply equipment	110

Policy Number	Policy	Page
LU Policy 1-5	Encourage resources and processes that support sustainable development for adaptive reuse projects, as well as appropriate infill projects.	111
LU Policy 1-6	Require that new building construction incorporate solar panels, vegetated surface, high albedo surface, and/or similar roof structures in order to reduce net energy usage and reduce the heat island effect.	111
Goal No. 2: Stimulate Continuous Economic Development and Job Growth **Strategy No. 4: Attract and invest in green and innovative industries to expand creative employment opportunities.**		
LU Policy 4-1	Provide a Land Use Plan that allows a place for green energy development and green businesses.	111
LU Policy 4-2	Promote the transition of some heavy industrial and manufacturing sites to creative green and sustainable industries.	111
Strategy No. 5: Create and maintain safe, accessible and sustainable employment and higher education centers.		
LU Policy 5-1	Require safe, attractive and environmentally-sustainable design, construction and operation of all buildings, landscapes and parking facilities in employment and educational centers.	111
Goal No. 3: Accommodate Strategic Growth and Change **Strategy No. 6: Implement the major areas of change identified in this Land Use Plan (Map LU-19).**		
LU Policy 7-3	Allow heavy industry uses as well as oil and gas facilities to transition to green industry where feasible and desired.	117
LU Policy 7-4	Encourage degraded and abandoned buildings and properties to transition to more productive uses through adaptive reuse or new development.	117
Strategy No 7: Enhance and improve the waterfront areas.		
LU Policy 8-2	Improve the Alamitos Bay Landing to create a more enjoyable and successful place with additional coastal access, recreation and visitor-serving uses and design improvements to create a more pedestrian-friendly and attractive area.	116
Goal No. 8: Increase Access, Amount and Distribution to Green and Open Space **Strategy No. 17: Increase open space in urban areas.**		
LU Policy 18-2	Enhance street corridors and spaces between buildings by incorporating small green areas, native and drought-tolerant landscaping and street trees.	122
Goal No. 9: Preserve, Protect, Restore and Reconnect with Natural Resources **Strategy No. 20: Reconnect with nature's systems and natural processes.**		
LU Policy 21-3	Continue to explore opportunities to provide leadership in intergovernmental coordination of environmental stewardship and protection of nature's systems and natural processes.	122

Policy Number	Policy	Page
Policies resulting in reduced greenhouse gas emissions and/or promoting active transportation, TOD, transit, mixed use neighborhoods, parks, open space, etc.:		
Goal No. 2: Stimulate Continuous Economic Development and Job Growth **Strategy No. 3: Maintain a strong, diversified economic base that creates jobs and attracts employers.**		
LU Policy 3-3	Promote the Neo-Industrial PlaceType to nurture creative class businesses and artists, including clean light industrial, artist galleries, studios and limited live-work units.	111
Strategy No. 5: Create and maintain safe, accessible and sustainable employment and higher education centers.		
LU Policy 5-2	Connect employment and higher education centers to other activity centers and adjacent neighborhoods via walking, biking and transit routes.	112
LU Policy 5-3	Require employment and higher education centers to transition to walkable and bikeable campus environments with wayfinding signage, integrated open spaces and easy accessibility via roadways, transit and bicycle routes.	112
LU Policy 5-4	Provide excellent transit connections to California State University at Long Beach, City colleges and all major employment and educational campuses.	112
Goal No. 3: Accommodate Strategic Growth and Change **Strategy No. 6: Implement the major areas of change identified in this Land Use Plan (Map LU-19).**		
LU Policy 7-2	Convert outdated and underutilized manufacturing and industrial sites to Neo-Industrial uses, particularly those adjacent to residential areas.	117
LU Policy 7-6	Promote transit-oriented development around passenger rail stations and along major transit corridors.	117
LU Policy 7-7	Continue to develop the downtown into a city center that provides compact development, accommodates new growth, creates a walkable urban environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.	117
LU Policy 7-9	Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.	117
LU Policy 7-11	Support infill and transit-oriented development projects by utilizing available tools, such as public-private partnerships and assistance with land assembly and consolidation.	117
Goal No. 4: Support Neighborhood Preservation and Enhancement **Strategy No. 9: Create complete neighborhoods with identifiable centers and a full range of supporting neighborhood-serving uses to meet the daily needs of residents.**		
LU Policy 10-1	Ensure neighborhoods contain a variety of functional attributes that contribute to residents' day-to-day living, including schools, parks, and commercial and public spaces.	118

Policy Number	Policy	Page
LU Policy 10-3	Plan for and accommodate neighborhood-serving goods and services, learning facilities, public amenities and transit stops within walking distance of most residences.	118
Strategy No. 10: Create healthy and sustainable neighborhoods.		
LU Policy 11-3	Support land use and policy decisions that promote local urban agriculture, community gardens, and local food production throughout the city.	118
LU Policy 11-5	Ensure neighborhoods are accessible to open spaces, parks, trails, and recreational programs that encourage physical activity and walkability.	119
Goal No. 5: Diversify Housing Opportunities **Strategy No. 11: Diversify Long Beach's housing stock.**		
LU Policy 12-5	Encourage major employers and higher education centers to participate in and contribute to planned housing development activities near their facilities.	119
Strategy No. 12: Facilitate housing type distribution.		
LU Policy 13-2	Provide new housing opportunities in neighborhood-serving centers and corridors, within transit-oriented development areas and downtown.	120
Goal No. 6: Ensure a Fair and Equitable Land Use Plan **Strategy No. 13: Promote the equitable distribution of services, amenities and investments throughout the City.**		
LU Policy 14-1	Remedy existing deficiencies in blighted and underserved neighborhoods by providing public facilities, amenities, improvements and services equitably throughout the City.	120
Goal No. 8: Increase Access, Amount and Distribution to Green and Open Space **Strategy No. 17: Increase open space in urban areas.**		
LU Policy 18-3	Allow for and encourage small-scale agriculture on public and private properties, including community gardens, edible gardens and landscapes, small urban farms and gardens throughout the City.	122

GLOSSARY

Acreage (Gross): The total land area in acres within a defined boundary, including any area for rights-of-way, public streets and dedications of land for public use.

Acreage (Net): That portion of gross acreage exclusive of public streets, rights-of-way and dedications of land for public uses.

Adaptive Use/Reuse: The process of converting a building to a use other than that for which it was originally designed and/or built. Such a conversion may be accomplished with varying alterations to the building.

Alternate Fuels: Fuels such as electricity, methanol, ethanol, natural gas and liquid propane gases that are cleaner burning and help to meet the California Air Resources Board's mobile and stationary emission standards.

Bike Route: A bicycle facility shared with motorists and identified by signs or pavement marking symbols. A bike route does not have lane stripes (Class III Bikeway).

Biomimicry: The imitation of models, systems and elements of nature for the purpose of solving complex human problems.

Bioswale: Landscape elements designed to remove silt and pollution from surface runoff water. They consist of a swaled drainage course with gently sloped sides and filled with vegetation, compost and/or riprap.

Buffer: Land and/or improvement designated to protect one type of land use from another where there could be compatibility issues. Where a commercial district or industrial use abuts a residential district, for example, additional use, yard or height restrictions may be imposed to protect residential properties.

California Building Code: A standard building code that sets minimum standards for construction. The California Building Code is outlined in Title 24 of the California Code of Regulations and includes the Uniform Plumbing Code, Uniform Mechanical Code, National Electric Code, California Fire Code and the California Energy Code.

California Environmental Quality Act (CEQA): A State law enacted in 1971 that requires governmental agencies at all levels to consider the impact proposed projects have on the environment, including cultural resource impacts.

Capital Improvement Program (CIP): A proposed timetable or schedule of future capital improvements (i.e., government acquisition of real property, major construction project or acquisition of long lasting, expensive equipment) to be carried out during a specific period, together with cost estimates and the anticipated means of financing each project. Capital improvement programs are usually projected five years in advance and are updated every two years in Long Beach as part of the City's two-year budget process.

Carbon Footprint: A measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide.

Carbon Sink: Natural and working lands, soils, wetlands and vegetation and other natural attributes that store or sequester carbon.

Centers: Nodes of activity that generally encompass areas with a predominant single use or mix of land uses.

Charter City: A city in which the governing system is defined by the city's own charter document rather than from laws of the State of California. See also General Law City.

City: City, with a capital "C," generally refers to the government or administration of the City of Long Beach. City, with a lower case "c" may mean any city or the general boundaries of Long Beach.

Climate Change (see also Global Warming): Climate change refers to any significant change in measures of climate (such as temperature, precipitation or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun; natural processes within the climate system (e.g., changes in ocean circulation); and human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization and desertification).

Compatibility: The characteristics of different uses or activities that permit them to be located near each other in harmony and without conflict. The designation of permitted and conditionally permitted uses in zoning districts is intended to achieve compatibility within the district. Some elements affecting compatibility include intensity of occupancy as measured by dwelling units per acre; pedestrian or vehicular traffic generated; volume of goods handled; and such environmental effects as noise, vibration, glare, air pollution or the presence of hazardous materials. On the other hand, many aspects of compatibility are based on personal preference and are much harder to measure quantitatively, at least for regulatory purposes.

Complete Streets: A comprehensive approach to the practice and related policies of mobility planning. The complete street concept recognizes that transportation corridors have multiple users with different abilities and mode preferences (e.g., pedestrians, bicyclists, transit riders and drivers) that need to be accounted for.

Condominium: An estate in real property consisting of an undivided interest in common in a portion of a parcel in real property, together with a separate interest in the space in a residential, industrial or commercial building on such real property such as an apartment, office or store.

Conservation: The management of natural resources to prevent waste, destruction or neglect.

Corridor: Major commercial or mix-use streets that connect centers and neighborhoods and have their own identity.

Crackerbox Apartment: An undistinguished apartment building lacking architectural character. They typically were built inexpensively, are incompatible with the scale of the neighborhood and lack appropriate parking spaces, private open space and landscaping.

Density: The number of dwelling units per unit of land. The Long Beach General Plan refers to density in terms of dwelling units per acre (du/ac).

Density, Gross: A units-per-acre density measurement that includes in the calculation land occupied by streets, sidewalks, parkways, alleys, utilities and other public rights-of-way.

Density, Net: A units-per-acre density measurement that includes in the calculation only land occupied by residential uses. It does not include streets, parks or other uses.

Development: Development has the meaning of §65927 (California Government Code) and is also any human-caused change to improved or unimproved real estate that requires a permit or approval from any agency of the city or county, including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations and storage of materials. "Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid or thermal waste; grading, removing, dredging, mining or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with §66410 of the Government Code) and any other division of land except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition or alteration of the size of any structure, including any facility of any private, public or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with §4511 of the Public Resources Code). As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume conduit, siphon, aqueduct, telephone line and electrical power transmission and distribution line.

Diversity: The variation among a particular group of things or people; for example, various social and cultural identities among people existing together.

Dwelling, Multi-unit: A building, or portion thereof, designed for occupancy by two or more households living independently of each other and containing two or more dwelling units.

Dwelling, Single-unit Attached: Dwelling units, each owned in fee and located on individual lots but joined along a single lot line, each of which is totally separated from the other by an unpierced wall extending from ground to roof.

Dwelling, Single-unit Detached: A dwelling unit owned in fee and located on an individual lot which is not attached to any other dwelling unit.

Dwelling Unit: A structure or portion of a structure used exclusively for human habitation.

Dwelling Unit per Acre (du/ac): Number of dwelling units per one acre of land; denotes residential density.

Ecosystem: A naturally occurring assemblage of organisms (plant, animal and other living organisms) living together with their environment, functioning as a loose unit; also referred to as a biotic community.

Energy Conservation: Reduction or elimination of unnecessary energy use and waste.

Entitlement: A permit granted to a land owner or authorized party giving them the right to improve the property. Such right is usually expressed in terms of a use and intensity allowed under a development agreement, subdivision or tract map, use permit, variance, building permit or other similar permit. For example, an entitlement may specify the maximum number of residential dwelling units permitted on a site or the maximum square footage of non-residential development permitted on a site.

Floodplain: A lowland or relatively flat area adjoining the banks of a river or stream which is subject to a one percent or greater chance or flooding in any given year.

Floor-Area Ratio (FAR): The floor area of the building or buildings on a site or lot divided by the area of the site or lot. The Long Beach General Plan describes allowable intensity in nonresidential areas in terms of FAR.

General Law City: Cities that are governed by California Government Code rather than by a locally adopted charter. See also Charter City.

Global Warming (see also Climate Change): An increase in the average temperature of the atmosphere near the Earth's surface and in the troposphere, which can contribute to changes in global climate patterns. Global warming can occur from a variety of causes, both natural and human-induced. In common usage, "global warming" often refers to the warming that can occur as a result of increased emissions of greenhouse gases from human activities.

Green Building: The practice of increasing the efficiency with which buildings and their sites use and harvest energy, water and materials and reducing building impacts on human health and the environment through better siting, design, construction, operation, maintenance and removal—the complete building life cycle.

Greenhouse Gases: Gases in the Earth's atmosphere that produce the greenhouse effect. Changes in the concentration of certain greenhouse gases, due to human activity such as fossil fuel burning, increase the risk of global climate change. Greenhouse gases include carbon dioxide, methane, nitrous oxide, halogenated fluorocarbons, ozone, perfluorinated carbons and hydro fluorocarbons.

Green Roof: A roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems.

Greenscapes: All living plant materials, trees, vines, shrub and ground-covers. Hardscape materials, whether pervious or impervious by design, are not considered greenscape.

Green Streets: A street that uses vegetated facilities to manage storm water, improve water quality and enhance watershed health.

Green Walls: A wall, either free-standing or part of a building, that is partially or completely covered with vegetation and, in some cases, soil or an inorganic growing medium.

Groundwater: The supply of fresh water under the ground surface in an aquifer or soil that forms a natural reservoir.

Habitat: The physical location or type of environment in which an organism or biological population lives or occurs.

Healthy Communities: Communities which are improving their physical and social environments and expanding and/or improving those community resources which enable

people to mutually support each other in performing all the functions of life and in developing to their maximum potential.

Housing Unit: A room or group of rooms used by one or more individuals living separately from others in the structure, with direct access to the outside or to a public hall and containing separate toilet and kitchen facilities.

Impervious Surfaces: Artificial structures—such as pavements (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick and stone–and rooftops.

Infill Development: Development that occurs on vacant land (usually individual lots or previously passed-over properties) or land that has been previously developed within areas that are already largely developed.

Infrastructure: The physical systems and services which support development and population, such as roadways, sidewalks, railroads, water, sewer, natural gas, electrical generation and transmission, telephone, cable television, storm drainage and others.

Intelligent Transportation Systems (ITS): The term refers to a wide range of advanced electronics and communications technology applied to roads and vehicles designed to improve safety and productivity.

Intensity: A measure of the amount or level of development often expressed as the ratio of building floor area to lot area (floor-area ratio) for commercial, business and industrial development, or dwelling units per acre of land for residential development (also called "density"). For the purposes of this General Plan, the intensity of non-residential development is described through the use of floor-area ratio.

Landscaping: Plantings and features, including but not limited to trees, shrubs and ground covers, which are designed, selected, installed and maintained to enhance a site or streetscape.

Land Use: A description of how land is occupied or used.

Leadership in Energy and Environmental Design (LEED): A rating system developed by the U.S. Green Building Council to certify buildings with sustainable features.

Lot: A legally recognized parcel of land abutting one or more public or City-approved private streets.

Low Impact Development (LID): An approach to land development that works with nature to manage rainwater as close to its source as possible. Low Impact Development employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to capture water on-site and while employing functional and appealing site drainage.

Mansionization. The practice of demolishing smaller, older houses in a neighborhood and replacing them with new ones that occupy the maximum amount of lot space possible, which dwarfs the surrounding dwellings.

Marshes: Type of wetland that is subject to frequent or continuous inundation. Typically the water is shallow and features grasses, rushes, reeds, typhas, sedges and other herbaceous plants.

Mixed-Use: Different types of land uses located in close proximity within one or more buildings and/or developments within the same district, planned and constructed to complement each other. Such uses may include, but are not limited to, residential, office, retail, public or personal service uses. "Mixed use development," per §65089 of the California Government Code, means development which integrates compatible commercial or retail uses, or both, with residential uses, and which, due to the proximity of job locations, shopping opportunities and residences, will discourage new trip generation.

Mobile Home: A State-licensed moveable or transportable vehicle, other than a motor vehicle, designed as a permanent structure of not less than two hundred fifty square feet in area intended for occupancy by one family, and having no foundation other than jacks, piers, wheels or skirtings.

Neighborhood: A geographically localized community within Long Beach. The General Plan identifies 69 distinct neighborhoods as of 2013.

open space (general descriptive term and used with lowercase letters in the General Plan): Land without buildings. This is a general, descriptive term that places no restrictions on the use of the land.

Open Space: (State of California definition): Any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional or state open-space plan as any of the following:

1. Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lakeshores, banks of rivers and streams and watershed lands.

2. Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

3. Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails and scenic highway corridors.

4. Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, floodplains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

5. Open space in support of the mission of military installations that comprises areas adjacent to military installations, military training routes and underlying restricted airspace that can provide additional buffer zones to military activities and complement the resource values of military lands.

6. Open space for the protection of places, features and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

Parcel: The basic unit of land entitlement. A designated area of land established by plat, subdivision or otherwise legally defined and permitted to be used or built upon.

Parklet: A small space serving as an extension of the sidewalk to provide amenities and green space for people using the street and sidewalk.

Paseo. A public place or path designed for walking.

PlaceType: Neighborhood or community-scaled land use districts that allow for a wide variety of compatible and complementary uses that better "complete" residential neighborhoods, employment centers, open spaces and other areas. PlaceTypes focus on the form, function and character of neighborhoods and larger community areas and allow for a broad mix of uses.

Public-Private Partnerships: A government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies.

Public Space: Land or structures that are open to anyone; may include public or private property; also referred to as the "public realm."

Rail, Light (LRT): An electric railway with a "light volume" traffic capacity (passenger) compared to heavy rail (cargo or passenger). Light rail may use shared or exclusive rights-of-way, high- or low-platform loading and multicar trains.

Recycling: The act of processing used or abandoned materials for use in creating new product.

Recycled Water: Wastewater that has been treated to remove solids and impurities and then allowed to recharge

the aquifer, which is often done by using the treated wastewater for irrigation.

Regional: Pertaining to activities or economies at a scale greater than that of a single jurisdiction.

Rehabilitation: The upgrading of a building in previously dilapidated or substandard condition for human habitation or use.

Renewable Energy: Generally refers to electricity supplied from renewable energy sources, such as wind power, solar power, geothermal power, hydropower and various forms of biomass. These energy sources are considered renewable sources because their fuel sources are continuously replenished.

Retrofit: To add materials and/or devices to an existing building or system to improve its operation or efficiency.

Right-of-Way: Any place which is dedicated to use by the public for pedestrian and vehicular travel. A right-of-way may include, but is not limited to, a street, sidewalk, curb and gutter. A right-of-way may be a crossing, intersection, parkway, median, highway, alley, lane, mall, court, way, avenue, boulevard, road, roadway, railway, viaduct, subway, tunnel, bridge, thoroughfare, park square or other similar public way.

Road Diet: A technique in transportation planning whereby a road is reduced in the number of travel lanes and/or the effective width in order to achieve systemic improvements. The reduction of lanes allows the roadway to be reallocated for other uses such as bike lanes, pedestrian crossing islands, wider sidewalks or parking.

Roundabout: A circular intersection or junction in which road traffic is slowed and flows almost continuously in one direction around a central island to several exits onto the various intersecting roads.

Smart City: A city that invests in human and social capital, transportation systems and modern communication infrastructure to fuel sustainable economic development and a high quality of life, with a wise management of natural resources, through participatory action and engagement. A smart city can include a smart economy, smart mobility, a smart environment, smart people, smart living and smart governance.

Smart Growth: A compact, efficient and environmentally sensitive pattern of development that provides people with additional travel, housing and employment choices by focusing future growth away from rural areas and closer to existing and planned job centers and public facilities.

Solar Energy: Energy from the sun that is converted into thermal or electrical energy.

Specific Plan: A tool authorized by Government Code §65450 et seq. for the systematic implementation of the General Plan for a defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development and use of natural resources and a program of implementation measures, including financing measures. Long Beach has generally prepared precise plans. Precise plans are often very similar to specific plans, but are preferred by some charter cities (which, unlike general law cities, can use any planning tool not prohibited by the State) due to the lack of State-mandated constraints.

Sphere of Influence: The probable physical boundaries and service area of a local government agency as determined by the Los Angeles County Local Agency Formation Commission.

Sustainability: The ability to meet the needs of the present economy, society and environment while preserving the ability of future generations to meet their needs.

Sustainable Building: A building approach that integrates building materials and methods that promote environmental quality, economic vitality and social benefit through the design, construction and operation of the built environment. Sustainable building merges environmentally responsible practices into one discipline that looks at the environmental, economic and social effects of a building or built project as a whole. Sustainable building design encompasses the following broad topics: efficient management of energy and water resources, management of material resources and waste, protection of environmental quality, protection of health and indoor environmental quality, reinforcement of natural systems and the integration of the design approach.

Traffic Calming: The combination of policies and measures that reduce the negative effects of motorized vehicle use while improving livability in the surrounding neighborhood. With traffic calming, accessibility and mobility are not reduced, they are modified to fit the needs of neighborhood. Traffic calming achieves this by modifying the design of streets to serve a broad range of transportation, social and environmental purposes.

Transit: The conveyance of persons or goods from one place to another by means of a local public transportation system.

Transit-Oriented Development (TOD): Moderate- to higher-density development, located within an easy walk of a major transit stop (train station, streetcar or bus), generally with a mix of residential, employment and shopping opportunities designed for pedestrians. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate transit use.

Urban Forest: The collection of trees citywide, including tree-lined streets, open green spaces, undeveloped natural open spaces and parks along with other public and private spaces within urban areas.

Urban Form: The relationship between building facades and the public realm, the form and mass of buildings in relation to one another and the scale and types of streets and blocks. Urban form guidelines endeavor to create a predictable public realm primarily by controlling physical form, with a lesser focus on land use.

Use: The purpose for which land or a building is designed, arranged or intended, or for which the land or building may be occupied or maintained.

Vacant: Lands or buildings that are not actively used for any purpose.

Walkability: A measure of how friendly an area is to walking. Factors affecting walkability include, but are not limited to: land use mix; street connectivity; residential density; "transparency" which includes amount of glass in windows and doors, as well as orientation and proximity of homes and buildings to watch over the street; plenty of places to go to near the majority of homes; placemaking, street designs that work for people, not just cars. Major infrastructural factors include access to mass transit, presence and quality of walkways, buffers to moving traffic (planter strips, on-street parking or bike lanes) and pedestrian crossings, aesthetics, nearby local destinations, shade or sun in appropriate seasons, street furniture and traffic volume and speed.

Water Conservation: Using water wisely and efficiently so that it is not wasted.

Watershed: The total area above a given point on a watercourse that contributes water to its flow; the entire region drained by a waterway or watercourse that drains into a lake or reservoir.

Wetlands: An area of land whose soil is saturated with moisture either permanently or seasonally.

Zoning: A police power measure, enacted primarily by units of local government, in which the community is divided into districts or zones within which permitted and special uses are established as are regulations governing lot size, building bulk, placement and other development standards. Requirements vary from district to district, but they must be uniform within the same district. The Zoning Ordinance consists of map and text adopted into the Municipal Code.

Zoning Map: The officially adopted zoning map of the City specifying the location of zoning districts within all geographic areas of the city.

REFERENCES

1. A Student's Guide to Global Climate Change. (2013, 7 25). Retrieved February 2013 from Environmental Protection Agency: http://epa.gov/climatestudents/impacts/signs/sea-level.html

2. Joe Linton (14 October 2005). Down By the Los Angeles River: Friends of the Los Angeles Rivers Official Guide. Wilderness Press. p. 5. Retrieved February 2013.

3. Rancho Los Cerritos History (2003). Retrieved February 2013, from Rancho Los Cerritos: http://www.rancholoscerritos.org/history.html

4. A Brief History of Long Beach, California (2003). Retrieved February 2013, from Bluff Heights Neighborhood Associations: http://www.bluffheights.org/2012/01/a-brief-history-of-long-beach/

5. Historic Preservation Element, Long Beach 2030 General Plan. Department of Development Services. Planning Bureau, Advance Planning Division, 2010.

6. A Brief History of Long Beach, California (2003). Retrieved February 2013, from Bluff Heights Neighborhood Associations: http://www.bluffheights.org/2012/01/a-brief-history-of-long-beach/

7. The Story of Oil in California. Retrieved February 2013, from The Paleontological Research Institution: http://www.priweb.org/ed/pgws/history/signal_hill/signal_hill2.html

8. Historic California Posts Naval Air Station, Terminal Island. Retrieved February 2013, from California State Military Department, The California State Military Museum: http://www.militarymuseum.org/NASTeminalIsland.html

9. Joint Forces Training Base - Los Alamitos. Retrieved February 2013, from California State Military Department, The California State Military Museum: http://www.militarymuseum.org/LosAl.html

10. Downtown Long Beach History. Retrieved February 2013, from Downtown Long Beach Associates: http://www.downtownlongbeach.org/history

11. Assembly Bill 32: Global Warming Solutions Act. (n.d.). Retrieved 2013, from California Environmental Protection: http://www.arb.ca.gov/cc/ab32/ab32.htm

12. Taylor, J. (2013, June 27). Sustainable Communities. Retrieved 2013, from California Environmental Protection Agency Air Resources Board: http://www.arb.ca.gov/cc/sb375/sb375.htm

13. Update to the General Plan Guidelines: Complete Streets and the Circulation Element (December 15, 2010). State of California Governor's Office of Planning and Research.

14. U.S. Census Bureau (2016). Selected population and household characteristics, American Community Survey 5-year estimates.

15. 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future (April 2012). Growth Forecast Appendix. Southern California Association of Governments.

16. Profile of the City of Long Beach (May 2017). Southern California Association of Governments.

17. Srivastava, Sujata; Braun, Derek; Edwards, Melissa and Popuch, Eli. Memorandum (July 2, 2010). Strategic Economics.

18. U.S. Census Bureau, 2010 Census.

19. Unemployment Data. Retrieved June 2013, from Pacific Gateway Workforce Investment Network, CIty of Long Beach. (: http://www.longbeach.gov/cd/workforce/media_center/unemployment_data.asp

20. Common Ground from the Mountains to the Sea. Watershed and Open Space Plan, San Gabriel and Los Angeles Rivers (October 2001). The California Resources Agency, San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy and Santa Monica Mountains Conservancy.

21. United States Environmental Protection Agency (EPA). Climate Change Indicators in the United States. 2015. http://www3.epa.gov/climatechange/science/indicators/weather-climate/temperature.html.

22. IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

23. Pacific Institute, California Flood Risk: Seal Level Rise, Long Beach Quadrangle. (2009). Oakland, California.

24. Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of obesity and trends in body mass index among US children and adolescents, 1999-2010. (2012). Journal of the American Medical Association.

25. Pingkuan Di, Ph.D., P.E. . Diesel Particulate Matter Exposure Assessment Study For The Ports Of Los Angeles and Long Beach. Final Report (April 2006). California Environmental Protection Agency, Air Resources Board.

Long Beach Development Services
333 W. Ocean Blvd., 3rd Floor
Long Beach, CA 90802

Visit us at www.lbds.info

E-mail us at lbds@longbeach.gov

facebook.com/LongBeachDevelopmentServices

@LongBeachDS

URBAN DESIGN element

City of Long Beach General Plan

March 2018

creating livable environments

LONG BEACH
DEVELOPMENT SERVICES
BUILDING A BETTER LONG BEACH

"What is the city but the people."

William Shakespeare

Urban Design

URBAN DESIGN element

City of Long Beach General Plan

Adopted by the Long Beach City Council on March 6, 2018

Processed by Long Beach Development Services

Assisted by RRM Design Group, MIG, Cityworks Design, and AECOM.

This information is available in an alternative format by request at 562.570.3807.
For an electronic version of this document, visit our website at www.lbds.info

ACKNOWLEDGEMENTS

Mayor and City Council

Honorable Mayor Robert Garcia
Lena Gonzalez, Councilmember, 1st District
Jeannine Pearce, Councilmember, 2nd District
Suzie Price, Councilmember, 3rd District
Daryl Supernaw, Councilmember, 4th District
Stacy Mungo, Councilmember, 5th District
Dee Andrews, Councilmember, 6th District
Roberto Uranga, Councilmember, 7th District
Al Austin, Councilmember, 8th District
Vice Mayor Rex Richardson, Councilmember, 9th District

Office of the City Manager

Patrick H. West, City Manager
Tom Modica, Assistant City Manager

City of Long Beach Planning Commission

Erick Verduzco-Vega, Chair
Richard Lewis, Vice Chair
Mark Christoffels
Ron Cruz
Josh LaFarga
Andy Perez
Jane Templin
Donita Van Horik, (retired)

City of Long Beach Development Services Staff

Tom Modica, Assistant City Manager
Amy J. Bodek, AICP, Director 2010-2017
Linda F. Tatum, AICP, Director
Christopher Koontz, AICP, Advance Planning Officer
Carrie Tai, AICP, Current Planning Officer
Ira Brown, Planner
Craig Chalfant, Planner
Fern Nueno, AICP, Planner
Alison Spindler, Planner
Angela Reynolds, AICP, (retired)
Pat Garrow (retired)
Steve Gerhardt, AICP, (retired)

Special Thanks

A special thanks is extended to the Long Beach Department of Technology Services for their able assistance in the preparation of the maps contained in this document.

table of CONTENTS

1 Vision: A City That Thrives

Introduction 3

2 Introduction: What is Urban Design?

Urban Design Overview 7

The Next Bold Moves: Vision in Motion 8

3 Context: Understanding the Urban Fabric

History 13

Our Region. Our City. 13

4 Urban Design Plan: Creating Livable Environments

Great Places 25

Urban Fabric 33

PlaceTypes 38

Public Spaces 62

Edges, Thoroughfares, and Corridors 67

5 Administration + Implementation: Maintaining the Urban Design Element

Introduction 89

Implementation 91

7 Appendix

References 95

Glossary 95

list of MAPS

Maps

Map UD-1: Historic Sites Map....31
Map UD-2: PlaceTypes Map....39
Map UD-3: Founding and Contemporary Neighborhood PlaceType Map....41
Map UD-4: Multi-Family Residential - Low and Moderate PlaceTypes Map....45
Map UD-5: Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes Map....47
Map UD-6: Transit-Oriented Development - Low and Moderate PlaceTypes Map....49
Map UD-6: Community Commercial PlaceType Map....51
Map UD-7: Industrial PlaceType Map....53
Map UD-8: Neo-Industrial PlaceType Map....55
Map UD-9: Regional-Serving Facility PlaceType Map....57
Map UD-10: Downtown PlaceType Map....59
Map UD-11: Waterfront PlaceType Map....61
Map UD-12: Open Space and Parks Map....63
Map UD-13: Areas of Change Map....92

table of FIGURES

Figures

Figure UD-1: Founding and Contemporary Neighborhood Bird's-Eye View....40
Figure UD-2: Founding and Contemporary Neighborhood Cross Section....40
Figure UD-3: Founding and Contemporary Neighborhood Building Types....42
Figure UD-4: Multi-Family Residential - Low and Moderate Residential Bird's-Eye View....44
Figure UD-5: Multi-Family Residential - Low and Moderate Residential Cross Section....44
Figure UD-6: Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes Bird's-Eye View....46
Figure UD-7: Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes Cross Section....46
Figure UD-8: Transit-Oriented Development - Low and Moderate PlaceTypes Bird's-Eye View....48
Figure UD-9: Transit-Oriented Development - Low and Moderate PlaceTypes Cross Section....48
Figure UD-10: Community Commercial Bird's-Eye View....50
Figure UD-11: Community Commercial Cross Section....50
Figure UD-12: Industrial Bird's-Eye View....52
Figure UD-13: Industrial Cross Section....52
Figure UD-14: Neo-Industrial Bird's-Eye View....54
Figure UD-15: Neo-Industrial Cross Section....54
Figure UD-16: Regional-Serving Facility Bird's-Eye View....56
Figure UD-17: Regional-Serving Facility Cross Section....56
Figure UD-18: Streets as the "Public Room" Using 1st Street and Linden Avenue as an Example....68
Figure UD-19: Porches....70
Figure UD-20: Stoops....71
Figure UD-21: Terraces....72
Figure UD-22: Forecourt....73
Figure UD-23: Storefront....74
Figure UD-24: Galleries....75
Figure UD-25: Arcades....76
Figure UD-26: Regional, Boulevard, and Major Avenue Street Types....78
Figure UD-27: Minor Avenue and Neighborhood Collector Street Types....79
Figure UD-28: Bike Corral With Cycle Track....80
Figure UD-29: Mid-Block Crossing....80
Figure UD-30: Bulbout....80
Figure UD-31: Parklet....80
Figure UD-32: Local Street Types....81
Figure UD-33: Local Street Type With Mini Roundabout....82
Figure UD-34: Pinchpoints....82

This page intentionally left blank.

Vision

A City That Thrives

1

"The more living patterns there are in a thing - a room, a building, or a town - the more it comes to life as an entirety, the more it glows, the more it has this self-maintaining fire, which is the quality without a name."

Christopher Alexander
Architect; Author - "A Pattern Language"

1

Vision

A City That Thrives

Introduction 3
» Goals 3

VISION: A CITY THAT THRIVES

Introduction

Today, Long Beach continues to evolve and develop as a community adapting to the global economy of the 21st Century. In essence, Long Beach is growing up – from a once-sleepy seaside suburb – to a young, vibrant City coming of age and looking to make its mark in a geographic arena dominated by the more well-known cities of Los Angeles and San Diego. But under the auspices of these two talked-about giants, Long Beach has continued on, in an unwavering direction, by staying true to itself and laying an urban framework to allow itself and the people that call it home to continue to adapt and thrive.

This Urban Design Element seeks to aid and shape the continued evolution of the urban environment within Long Beach, while at the same time leveraging the unique relationship of the City to its natural environment. It is concerned with both the preservation of existing neighborhoods that define its unique character and building upon them to allow for continued adaptation and improvement of the built environment. Desired goals of the Urban Design Element include:

Goals

Creating Great Places

Creating Great Places allows for friends and strangers to interact in a space that encourages activity, spontaneity, exploration and discovery. Great Places encourage businesses to relocate for both the quality of life of employees and their families. These Great Places are timeless and demand to be visited over and over again.

Urban Fabric

Defining patterns within the existing Urban Fabric successfully expresses what makes Long Beach unique, and is reflective of the neighborhoods and context of the City. It allows for the establishment of new development patterns that do not detract from successful, historical development patterns, but rather builds upon and celebrates the pre-existing Urban Fabric, both natural and man-made, as a component of place.

The Urban Design Plan: Creating exciting and vibrant places.

Public Spaces

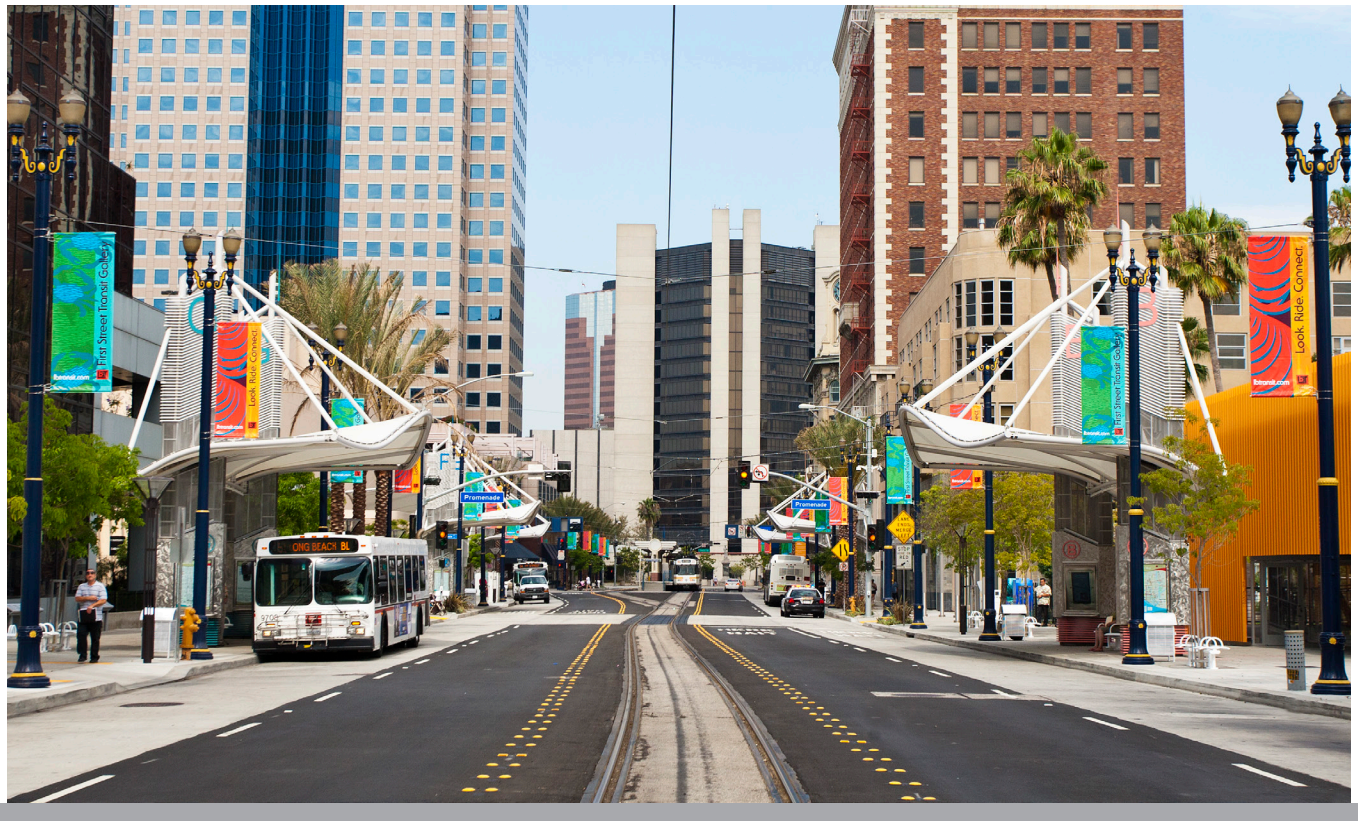
Integrating Public Spaces that allow for the community to come together for informal and formal events, where public art can be put on display, where both children and adults can engage in physical activities, and where civic engagement can occur. These Public Spaces are informed by the context of Long Beach and its history of diversity, uniqueness, and civic involvement.

Edges, Thoroughfares, and Corridors

Edges, Thoroughfares, and Corridors reflect the uniqueness of the natural and urban environments and the neighborhoods that they traverse. Natural and man-made edges, such as the Pacific Ocean, Port of Long Beach, Los Angeles River, and San Gabriel River, act as catalysts for improved environmental health, quality of life, and opportunities for non-motorized modes of transit. Thoroughfares act to define the larger commercial activities of the City, while at the same time integrating pedestrian amenities that allow for transitioning into adjacent districts. Corridors are the heart of the community where individual neighborhood characteristics are celebrated, opportunities for the 'public room' concept are provided, and a wide-array of multimodal transportation options are supported. Functioning corridors enhance the quality of adjacent neighborhoods, connectivity to them, and accessibility to goods and services.

Bicycle and pedestrian activity along the waterfront.

Multi-modal transportation opportunities.



Introduction

What is Urban Design?

2

"Urbanism works when it creates a journey as desirable as the destination."

Paul Goldberger
Architecture Critic, The New Yorker

2

Introduction

What is Urban Design?

Urban Design Overview.....7
The Next Bold Moves: Vision in Motion.....8

» Healthy, Sustainable Neighborhoods 8

» Compact, Connected Development.....8

» Healing the Urban Fabric (Minimizing Conflicts, Filling in Gaps).....8

» Corridors and Adjacent Neighborhoods.....8

» Improved Relationships Amongst Buildings, Streets, Public Spaces, and People 9

» Ce

INTRODUCTION: WHAT IS URBAN DESIGN?

Urban Design Overview

Urban Design describes the physical character and organization of the urban environment and the relationship between people and the environment of a place. It considers the history of place, existing organizational patterns of the urban environment, the form and character of its buildings, health of its exterior pedestrian spaces, and its setting within the natural environment. These considerations as a whole are aimed to be representative and reflective of a community's values and define the context of place in which they reside.

The urban environment of Long Beach has been continually cultivated and developed over the past 150 years. The strong grid-like street layout, unique walkable neighborhoods, and recently revitalized downtown and Douglas Park areas are all signs that the City's continual cultivation of its urban environment is now coming to fruition. Defining urban design guidelines that represent the values of the Long Beach community will ensure that the built environment continues to contribute to the identity and qualities that make the City a unique and desirable place for people to visit and call home.

Improvements and enhancement to the spaces between here and there create an exciting sense of place and bridge the gaps between corridor and neighborhood, building to street, and business owner to patron. Quality urban design improves the quality of place, transforms underutilized areas into exciting places with unexpected discoveries, provides a setting for art and activities, and celebrates the diverse communities of Long Beach.

The intended outcome of this Urban Design Element is to strengthen the existing areas of the City that are already illustrative of the identity and qualities representative of the community's values. At the same time, urban design goals and strategies for weaving areas of land use conflict back into the urban fabric of the City will be outlined. Urban design goals and strategies will be informed by the defined values of the community and the context of the City of Long Beach.

Recreational opportunities along The Promenade create engaging spaces.

The Next Bold Moves: Vision in Motion

Healthy, Sustainable Neighborhoods

Fostering Healthy, Sustainable Neighborhoods will provide residents, both young and old, with opportunities to remain active and involved in the community. Sustainable neighborhoods provide opportunities for active and passive recreation, the ability to walk to shops and services, access to healthy foods, and the choice to age in place. These neighborhoods are considerate of existing conditions and potential future impacts. Architectural and urban design strategies help to design neighborhoods, streets, and outdoor spaces that encourage walking, bicycling, and safe, universal access to goods and services that increase regular physical activity and healthy eating in a community.

Compact, Connected Development

New development will efficiently utilize space by focusing growth within existing neighborhood districts, providing Compact, Connected Development that is adjacent to shops, restaurants, and services. New development should be considerate of proximity to public transit and should foster the use of alternative modes of transit. Spaces for public interaction and private reflection will provide a healthy contrast of an urban, yet secluded dynamic.

Healing the Urban Fabric (Minimizing Conflicts, Filling in Gaps)

Fragmentation of the urban environment has occurred slowly over the past 60 years, fostering areas of unintended land use conflict within the City. Healing the Urban Fabric by addressing these areas of conflict and underutilized spaces, and weaving them back into the existing urban fabric, will allow opportunities to expand upon strong, adjacent neighborhood frameworks and establish new neighborhood identities. Gaps in the urban form can be filled and can create continuity in the urban environment.

Priority focus for Healing the Urban Fabric should be placed along corridors and in established and historic neighborhoods. Highest aspirations for key sites and special locations should be identified in order to facilitate growth and revitalization.

Corridors and Adjacent Neighborhoods

Improving traffic congestion, the distribution of goods and services, and mobility functions, as described within the Mobility Element, will help enhance the quality and linkages between corridors and adjacent neighborhoods. Urban design policies incorporate methods for strengthening connections by encouraging the physical connection to pedestrian networks and adjacent and adjoining neighborhoods, alleys, open spaces, and the broader community with nodes, plazas, open space areas, art, and landscaping. Incorporating safe accessibility to corridors and providing amenities along the way will help activate the urban environment and entice people to walk or ride their bike to local neighborhood services instead of driving.

Molina Plaza.

133 Promenade.

Improved Relationships Amongst Buildings, Streets, Public Spaces, and People

Improved relationships between buildings and streets will create environments where both can interact in lively and continuous synchronicity. Public spaces will be integrated throughout the urban environment, which allows for outdoor exercise, people-watching opportunities, and formal and informal interactions. People will be enticed to explore these public spaces and streets, and in conjunction with buildings, will provide visual and intriguing curiosity.

Economic Vitality

Supporting and building upon the economic activity of the City will ensure continued job opportunities for new and existing residents and provide opportunities for new businesses to locate and thrive. This includes providing opportunities for live-work settings, expanding upon existing business successes, and laying the foundation for the new, digital economy of the 21st Century. Adaptive reuse also encourages growth by healing the urban fabric to support and sponsor economic vitality. New growth will be targeted at identified areas of change in order to foster economic activity.

A patio and dining area provides an active and engaging frontage along The Promenade.

The Promenade has become a successful redevelopment project, bringing new life and activity to the Downtown area.

This page intentionally left blank.

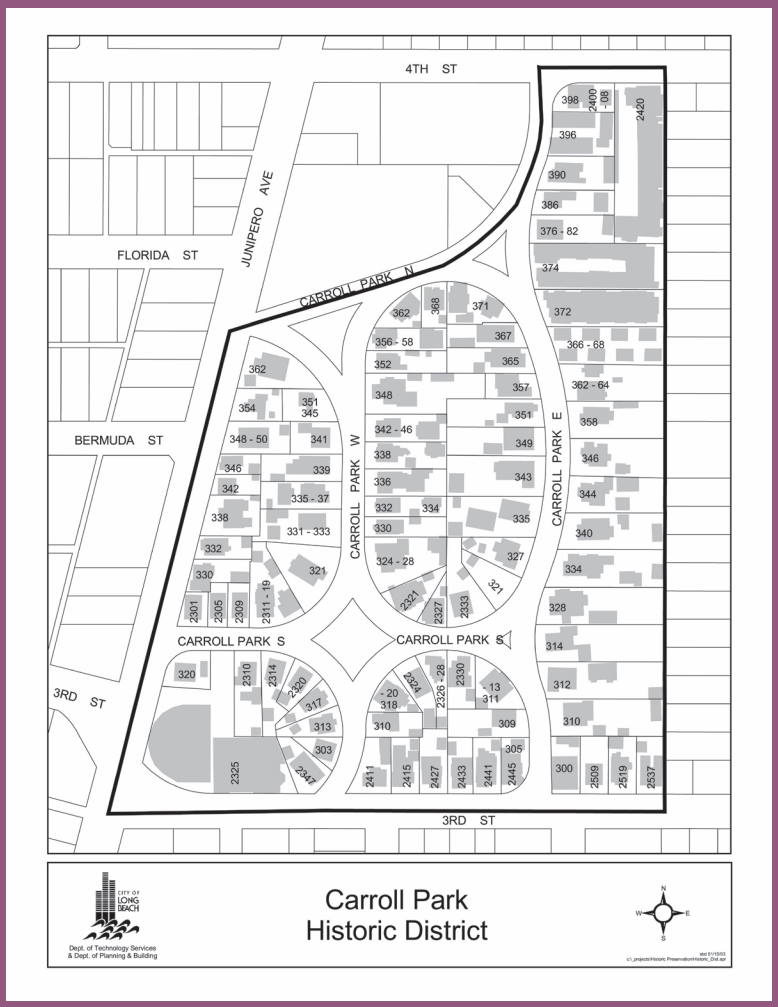
Context

Understanding the Urban Fabric

3

"I believe that the idea of the totality, the finality of the master plan, is misguided. One should advocate a gradual transformation of public space, a metamorphic process, without relying on a hypothetical time in the future when everything will be perfect. The mistake of planners and architects is to believe that 50 years from now Alexanderplatz will be perfected."

Daniel Libeskind
Architect



3

Context

Understanding the Urban Fabric

History 13
» Understanding the Past and the Place 13
Our Region. Our City. 13
» The Fabric: Understanding the City Today 13
» Connecting Corridors 18
» Public Realm and Sustainability 19
» Placemaking 20

CONTEXT: UNDERSTANDING THE URBAN FABRIC

History

Understanding the Past and the Place

The City's history is reflected in its built environment. Everything from City boundaries and existing land uses, to the configuration of streets and the quality of the public realm, are the results of past planning and development efforts. These practices, while informed by the City's collective values, evolve over time with each era, reflecting a slightly different focus and way of thinking about Long Beach. Important aspects of the City's historic features are described in more detail in the Historic Preservation Element and associated Historic Context Statement.

Today, Long Beach is comprised of mature urban and suburban neighborhoods, and both types have buildings that are historic, traditional, or contemporary in style. Differences can be seen in the infrastructure of neighborhoods. For example, the narrow street and small blocks of Downtown have always been very walkable in comparison to the post-war pattern of wide streets and large blocks, found in places like East Long Beach, that reflect automobile-centric planning common to that era. Additionally, major streets throughout the City have been widened over time to move more automobiles efficiently within the City; today, it is understood that those decisions have not been ideal for pedestrians, bicyclists, or the creation of livable neighborhoods.

The City's growth over time, and development linked to positive economic cycles, has made the City a tapestry of land uses, street types, and development patterns. There is no doubt that while residents and business owners enjoy many aspects of the City today, they also want neighborhoods to become more livable and sustainable over the next twenty years and beyond.

Our Region. Our City.

The Fabric: Understanding the City Today

Before setting out to plan for the future, it is helpful to understand how Long Beach evolved into its present form and how it is perceived today as a City within the larger metropolitan region of Los Angeles and that of Southern California. Our history manifests itself in the physical form and layering that exists today. Looking at the City's physical features helps provide a clearer image of the City in its totality. The overlapping networks and various features provide a number of ways to look at and consider our built environment. This urban form analysis is intended to provide a brief context for understanding the current built environment of Long Beach, focusing on the major features, district centers, and primary corridors that connect established neighborhoods. It should serve as a foundation for thinking about urban design at the scale of the City, and ultimately at the finer grain of the neighborhood.

Historic Long Beach Postcards.

Edges

The City encompasses 50-plus square miles, framed by naturalistic and man-made features. Most notable, is the stretch of Pacific Ocean that defines the southern waterfront edge and is the City's namesake. The natural features of the bay and white beaches all along its edges are very special for a city the size of Long Beach. The San Gabriel River and Coyote Creek define the eastern edge of the City up to the Orange County bordering the cities of Cypress, Los Alamitos, Rossmore, and Seal Beach. The western edge is defined by the City of Los Angeles' port-related facilities, the Los Angeles River, and the cities of Wilmington, Carson, and a portion of unincorporated Los Angeles County. The northernmost part of Long Beach is bordered by the cities of Compton, Paramount, and Bellflower. The cities of Lakewood and Hawaiian Gardens complete Long Beach's northeastern boundary. Signal Hill is isolated in the center of the City, forming an unusual internal boundary near the southwestern edge of the Long Beach Municipal Airport, along the Old Pacific Electric route.

In the eighteenth and nineteenth centuries, ranchos were created from Spanish or Mexican land grants throughout California. Today, these ranching boundaries exist in some locations as remnant edges or major thoroughfares. Long Beach is comprised of portions of Rancho San Pedro (Dominguez), Rancho Los Cerritos, and Rancho Los Alamitos.

Thoroughfares

Five major freeways represent the regional thoroughfares in Long Beach and provide regional access for residents, employees, and visitors who use the 103/Terminal Island Freeway, 710/Long Beach Freeway, 405/San Diego Freeway, 91/Artesia Freeway, or the 605/San Gabriel Freeway. These regional corridors are vestiges to the Interstate Highway System of the 1950s and 1960s when they were built, and provide convenient, grade-separated regional connections, but also divide the existing urban fabric.

Other major thoroughfares that give definition to the City and the neighborhoods they traverse, include the Pacific Coast Highway and boulevards such as Ocean Avenue, Lakewood Boulevard, Atlantic Avenue, Anaheim Street, 7th Street, Long Beach Boulevard, Carson Street, and the Los Coyotes Diagonal. The regional and major roadway network is discussed in greater detail within the Mobility Element.

Metro's Long Beach Blue Line, from Los Angeles, provides a fixed rail transit thoroughfare and a unique experience of moving north-south through the City and connecting Downtown Long Beach with Downtown Los Angeles.

Bicycle transportation along the waterfront.

Public transit.

Scenic Routes

The existing designated scenic route of Ocean Boulevard and Livingston Drive will continue to be a scenic route within Long Beach. In addition, the system will be expanded to include Ocean Boulevard on the Belmont Peninsula, the Promenade in Downtown, the Los Angeles River and San Gabriel River corridors, Appian Way along the Colorado Lagoon, Marine Stadium, Studebaker Road, the approach road to Rancho Los Cerritos, and the entire stretch of Pacific Coast Highway. These roadways are, or will become by 2030, scenic highways. To that end, the roadways will receive highest priority for streetscape and utility undergrounding funding. Future projects along these scenic routes will be scrutinized for their architectural contributions to the overall aesthetic value of these important corridors.

Trails

Trails allow for non-motorized movement across the City on bicycle or by foot. These include the Bluff Park trail and Shoreline Park along the Pacific Ocean beach and the paths along the Los Angeles River and San Gabriel River. Collectively, bicycle paths, routes, and bikeways create a trail mobility network that provides access within the City.

Districts

Long Beach can be defined through its many districts that vary by the mix of land uses and architectural character. Long Beach is often described as a great city made up of unique neighborhoods. Residential districts comprise the largest area of the City, but there are also other large districts such as industrial districts and the Downtown district. The historic districts, in particular, often have well-defined characters and edges. This plan redefines districts to achieve an ideal and more complete mix of land uses by applying the concept of PlaceTypes (introduced later in this chapter and discussed in the Land Use Element), which are essentially district-oriented land use designations.

Centers

Centers are places in a city where people and activities are clustered. A main street corner or central shopping area that brings residents together constitutes a center of local activity. Centers serve as the social heart for many Long Beach neighborhoods and can be elongated in form, like a segment of a corridor such as Atlantic Avenue in Bixby Knolls, or just focused around an intersection such as Broadway at Redondo, or Viking and Nordic Way off Carson Street.

Gateways

Often our first impression of Long Beach is made as we enter through gateways from major freeways or boulevards into the City. Gateways can clarify the beginning of, and announce the arrival into, distinct neighborhoods and districts. Important transportation gateways into the City include the Long Beach Municipal Airport, Metro Long Beach Blue Line stations, and the Cruise Ship Terminal.

The Pike at Rainbow Harbor along Shoreline Drive.

Tourists orient themselves at The Pike at Rainbow Harbor.

Landmarks and Iconic Sites

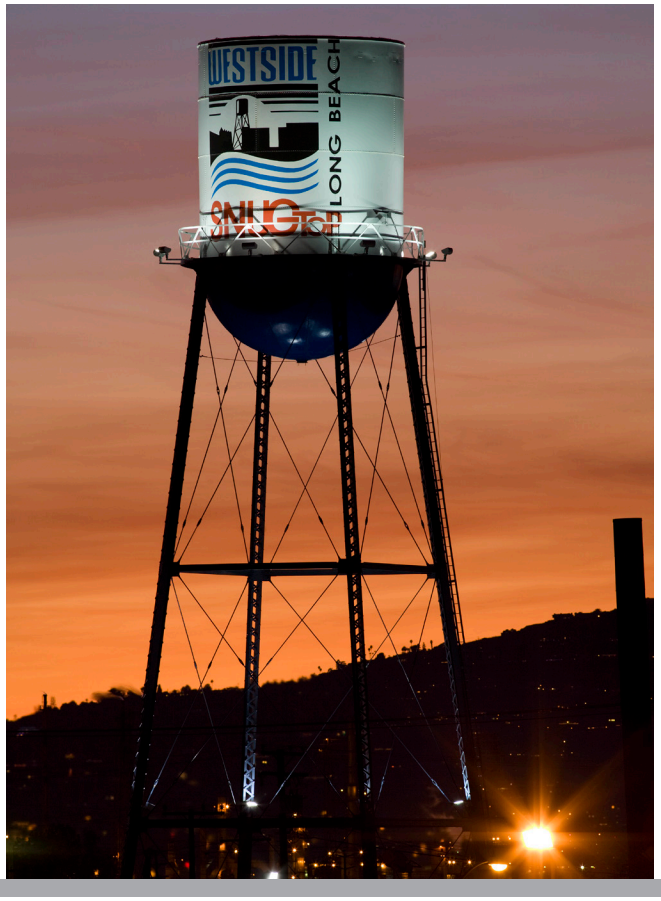
Landmarks help orient us as we move through a city. From an urban design perspective, they can be an important building, historic site or structure, an established neighborhood, landscaped area, or natural feature. Some of the City's major landmarks include the Downtown, Pine Avenue, the Long Beach Convention and Entertainment Center, Aquarium of the Pacific, Queen Mary, Queensway Bay and offshore islands, Villa Riviera, Second Avenue, Traffic Circle, Cal State Long Beach, Long Beach City Colleges, Long Beach Memorial Medical Center, Long Beach Municipal Airport, and Signal Hill. Some of the historic and cultural assets of Long Beach include the two beautifully preserved original ranchos, the Rancho Los Cerritos and Rancho Los Alamitos; the iconic Villa Riviera building and other designated historic landmarks, the Pier J port complex, the shoreline area and Downtown skyline, and the many historic and well-maintained neighborhoods located throughout the City that provide distinctive environments that denote our storied past. Public and communal buildings, such as the Airport terminal, Museum of Latin American Art (MOLAA), libraries, and other civic structures are all visual assets unique to Long Beach. Iconic sites are those locations that can be seen from a long distance or from multiple locations, and are where corridors terminate, such as the Villa Riviera, seen clearly while traveling in its direction along Ocean Boulevard and Alamitos Avenue; City Hall, where 1st Street terminates; and other similar locations. Dramatic, well-landscaped approaches to special locations, such as the driveway to the Ranchos, contribute significantly to these iconic sites.

Old Long Beach Airport.

Water Features

Alamitos Bay and the neighboring channels, estuaries, and waterways were once part of a much larger wetlands area, associated with the terminus of the San Gabriel River, and including what is now referred to as the Los Cerritos wetlands and the remainder of the Southeast Area or Southeast Area Specific Plan (SEASP) area. Many of these areas were land-filled over time to create the buildable lands where neighborhoods and commercial centers are now located. Naples, Belmont Shore, the Peninsula, the Marina Stadium, and Colorado Lagoon are all part of this interconnected waterway system. Belmont Pier marks the western extent of this area along the original shoreline. Closer to the Downtown is the original shoreline, still defined by the bluffs, which start at Bluff Park and Alamitos Beach, and continues along the lower slope behind the Villa Riviera and Breakers buildings. These buildings used to sit on the bluffs above the ocean at a time when waves regularly reached the beach along this portion of the shoreline. The area that is now the Pike and the cargo terminals of the Port of Long Beach were land-filled as part of the creation and dredging of the Long Beach Harbor complex. Since World War II, the harbor and south waterfront define the terminus of the Los Angeles River, as it completes its 50-mile journey from the western end of the San Fernando Valley.

Westside Tower.



Topography and Views

Long Beach gently slopes down toward the ocean from north to south, as part of the alluvial plain between the Los Angeles River and San Gabriel River. The City slopes with the exception of Hilltop/Willow Spring Park and other uplifted areas associated with the Newport Inglewood fault zone, which runs through the City from the southeast, through Alamitos Bay and the Colorado Lagoon, to the northwest near the Dominquez Gap. Views help orient us between landmarks in the City. Long Beach's topography provides opportunities for views to and from higher elevations and buildings that help with wayfinding. Vistas from high points, open locations, long corridors, and other similar places within the City include high grounds in mid-City and near Signal Hill looking toward Downtown and the coast, small promontories such as Los Cerritos hill, views across the airport tarmac, into golf courses and parks, along rivers and channels, and natural areas among others. Wide, tree-lined streets through older neighborhoods can be scenic and pleasant to traverse, and adds to the visual character of a neighborhood. Other important vistas include the view along Alamitos, south to Villa Riviera; El Dorado Park; 3rd Street to the Port of Long Beach cranes; Ocean Boulevard; Bluff Park to the Pacific Ocean and Belmont Pier; Queensway Bay and Shoreline Park to the Queen Mary and cruise ships; the Downtown; the marinas; and Los Coyotes Diagonal to the distant San Gabriel Mountains. There are also dramatic views from the City of Signal Hill out and over Long Beach. While there is otherwise little topographic relief across the rest of the City, this assures that there are also many walkable and bikeable neighborhoods.

Long Beach Skyline.

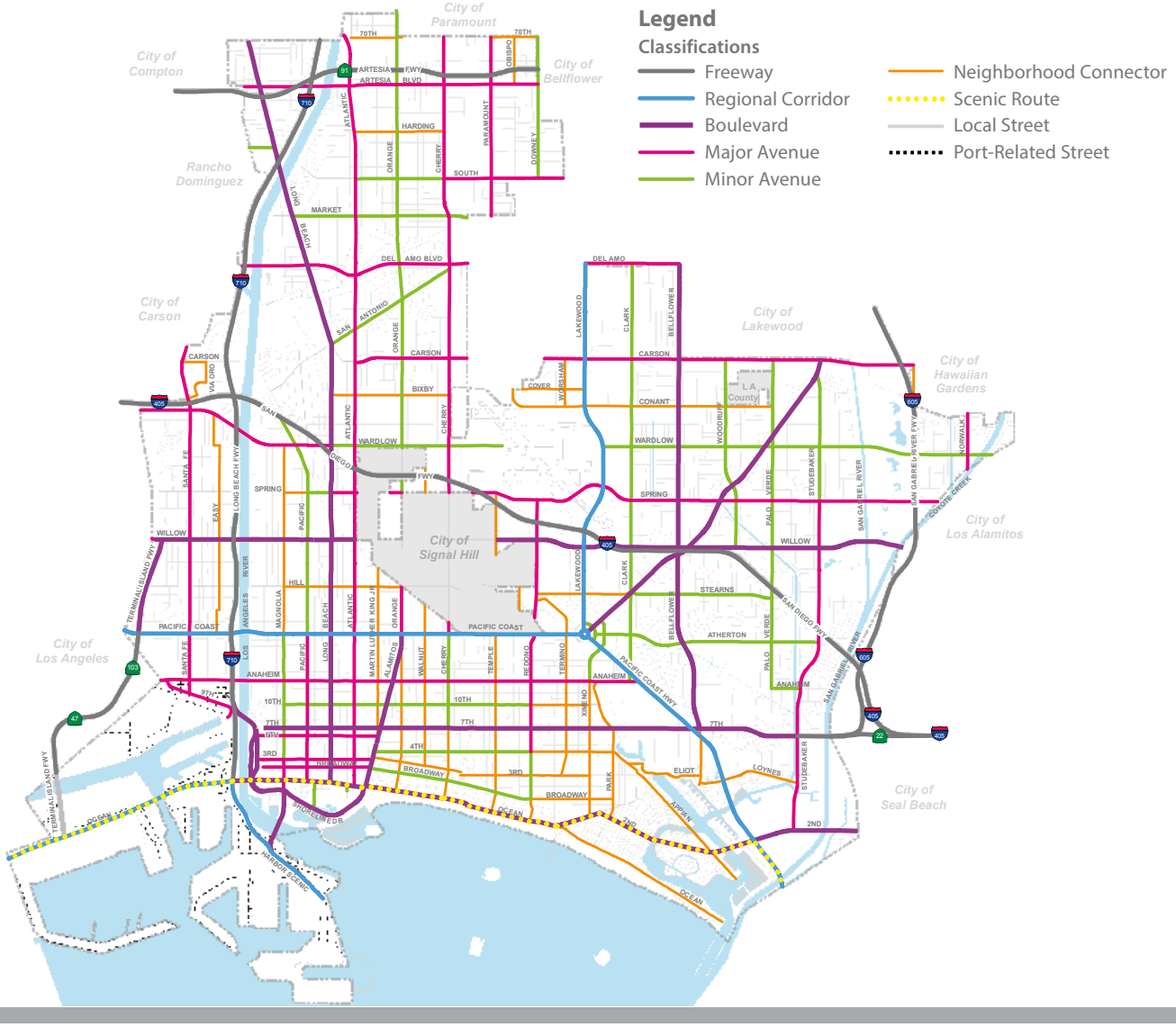
Connecting Corridors

There already exists a framework that connects a variety of neighborhoods within the City. These major connections are comprised of streets, avenues, and boulevards that run uninterrupted across the City. Each major connecting corridor needs to adequately serve the pedestrian, bicyclist, automobile, bus and rail transit service, and the existing and projected land uses that frame them.

Each connecting corridor should reflect the individual neighborhood that it traverses and serves. The corridors provide opportunities to serve as a bridge that can reconnect neighborhoods throughout the City. In many cases, corridors also serve as the heart of a community, and their local activities help define a unique place within the City. Connecting corridor examples include Long Beach Boulevard at Market and 2nd Street in Belmont Shores.

Future development along the corridors is critical to reinforcing strong connections between neighborhoods across the City. Most of the major boulevards are centers for commercial activity, but current conditions reflect a focus on widened roadways and automobile capacity, which has significantly affected the quality of the public realm for pedestrians. Future planning efforts along the corridors should incorporate pedestrian amenities and improved circulation to increase mobility and provide opportunities to create truly successful pedestrian-oriented districts. There are also opportunities to focus on development within neighborhood centers along the corridors, improve the overall public transit experience, improve bicycle circulation, and integrate sustainable streetscape practices with respect to water management and usage. A number of these concepts and strategies are presented and elaborated on within the Mobility Element.

Street Classifications (Refer to the Mobility Element)



Public Realm and Sustainability

Creating a more sustainable and healthy Long Beach is a long-term endeavor, which includes protection of its natural features, reduction in carbon emissions, and energy and water use. The ocean, rivers, and wetlands of Long Beach are the most sensitive to pollution. Reducing run-off into these water bodies and minimizing pollution released into the air are top priorities. Since the largest contributor of harmful emissions are cars and trucks, reducing vehicle trips is also essential. The most significant way to achieve a sustainable and healthy Long Beach is to effectively connect land use and transportation in order to ensure residents have better access to their homes and work, thus reducing their need to drive. In a built-out city, the opportunities for new development are limited, making each decision that much more critical. Implementing the Green Port Policy included in the Port of Long Beach's Strategic Plan will also play an important part in making the City's future more sustainable.

At the street level, the use of innovative approaches to stormwater management, drought-tolerant and low-water landscaping, and energy-efficient street light fixtures can assist in the preservation of water and energy. Improving Long Beach's sustainability will require looking at the City holistically: as a fabric of natural features and man-made interventions such as streets, sidewalks, and buildings, which must be thoughtfully planned and coordinated to promote more sustainable neighborhoods.

Creating healthier neighborhoods involves providing adequate open space and recreational opportunities, as well as convenient access to healthy foods and health care services. Providing safe places for people to walk and meet neighbors builds a sense of community, while also contributing to healthier lifestyles.

Another facet of sustainability and social equity is balancing the distribution and availability of resources across all of the City's neighborhoods in the future, from North Long Beach to the Shoreline, and from the East side to West Long Beach. The National Academy of Public Administration defines social equity as "the fair, just, and equitable management of all institutions serving the public directly or by contract; the fair, just, and equitable distribution of public services and implementation of public policy; and the commitment to promote fairness, justice, and equity in the formation of public policy." This Chapter is intended to further sustainability and social equity distribution across the City through strategies and policies included within Section Four.

A bioswale filters stormwater before entering storm drains.

Providing bicycle facilities encourages use of alternative modes of transportation.

Placemaking

The previous sections described the elements of natural features, corridors, and public space within a regional context across the City. However, most people experience the City at the everyday scale of neighborhoods and centers, like Downtown Long Beach, where pedestrian and commercial activities are focused. Great cities are defined by a variety of places across diverse communities and terrain. Understanding the existing character or spirit of a place, paired with a vision of its potential future, provides a framework to support "placemaking" of these vital centers.

The scale of each place can vary from just a small space, to a couple of blocks, to a larger reach in bigger districts. There are "commercial/corner nodes," which are more like an auto-oriented regional commercial center, and "pedestrian-oriented places," which look more like a pedestrian-friendly neighborhood center. Both of these types of places must consider pedestrians and cars, but they serve two very different purposes. In each case, the challenge is to enhance the pedestrian experience, not simply facilitate the movement of traffic through these places. In creating a comprehensive "placemaking" vision, it will be essential to balance the needs of both automobiles and pedestrians.

Increasing density will also need to be considered to make some of the neighborhood centers more viable. Providing a mix of services that include provisions for additional housing options will help to create livable communities that integrate strategies for mobility, density, and amenities. Selecting key focus areas within neighborhood centers will provide an example and a catalyst for how specific areas can evolve into vibrant centers of activity for individual neighborhoods, similar in style and form found within the great cities around the world.

Walkable streets encourage a healthy pedestrian environment.

The Promenade provides a mix of uses and lively amenities along a pedestrian street in the heart of downtown.

Urban Design Plan

Creating Livable Environments

4

"Growth is inevitable and desirable, but destruction of community character is not. The question is not whether your part of the world is going to change. The question is how."

Edward T. McMahon
The Conservation Fund

4

Urban Design Plan

Creating Livable Environments

Great Places 25
- » Improved Functionality 25
- » Improved Appearance 26
- » Improved Health and Sustainability 27
- » Economic Resilience 29
- » Social and Cultural Vitality and Diversity 30
- » Public Art 32
- » Signs and Wayfinding 32

Urban Fabric 33
- » Neighborhoods/Community Building Blocks 33
- » Building Form and Development 34
- » Compact Urban And Infill Development 35
- » Natural Area and Parks to Built Area 36
- » Scenic Routes and Iconic Sites 37

PlaceTypes 38
- » Founding and Contemporary Neighborhood PlaceType 40
- » Multi-Family Residential - Low and Moderate PlaceTypes 44
- » Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes 46
- » Transit-Oriented Development - Low and Moderate PlaceTypes 48
- » Community Commercial PlaceType 50
- » Industrial PlaceType 52
- » Neo-Industrial PlaceType 54

Urban Design Plan

Creating Livable Environments

4

» Regional-Serving Facility PlaceType 56

» Downtown PlaceType 58

» Waterfront PlaceType 60

Public Spaces 62

» Natural Areas, Watersheds, and Views 62

» Open Spaces and Parks 62

» Plazas, Squares, and Other Publicly Accessible Private Spaces 64

» Community Facilities 65

» Infill Public Space (Plazas, Community Gardens, Parks) 65

» Interstitial and Temporary Spaces 66

Edges, Thoroughfares, and Corridors 67

» Interface Between Buildings and Streets 67

» Streets as the "Public Room" 68

» Frontages 68

» Street Type 77

» Trees and Landscaping 83

» Parking Lots, Driveways, and Access Points 84

» Pedestrian Infrastructure 85

» Bicycle Infrastructure 85

» Transit Infrastructure 86

4 Urban Design Plan

Creating Livable Environments

URBAN DESIGN PLAN: CREATING LIVABLE ENVIRONMENTS

This section describes the goals of urban design in Long Beach at the highest level, outlining the intended long-term effects of incorporating urban design considerations into policy and development decisions.

Great Places

Great places have functional neighborhoods, are attractive and aesthetically pleasing, provide healthy activities, are economically viable, enhance social and cultural vitality, and promote the arts. The following strategies support great places.

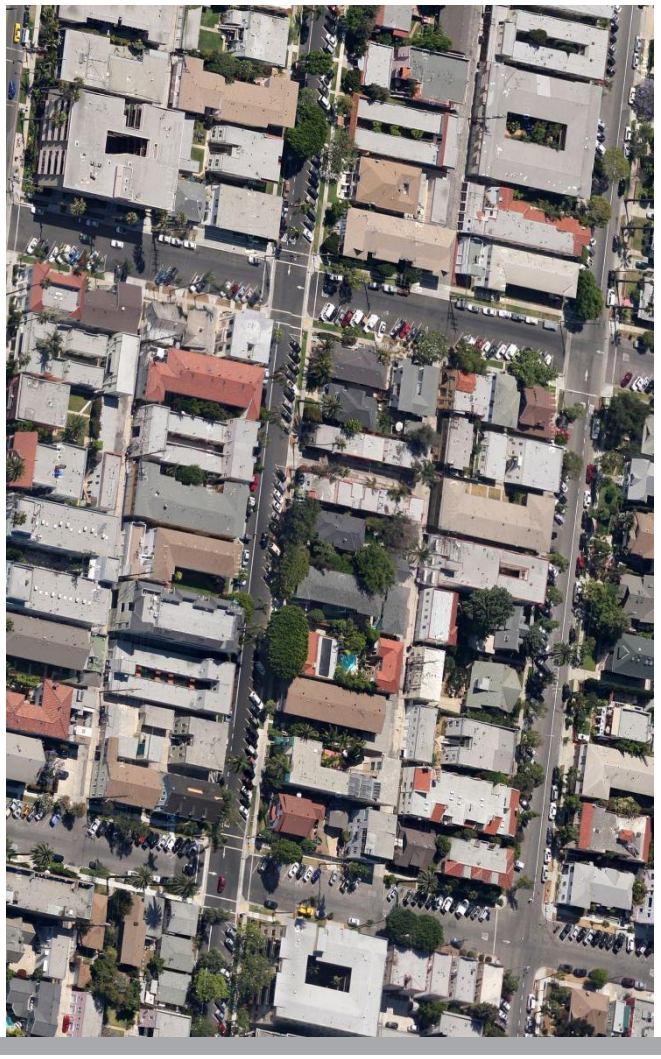
Improved Functionality

STRATEGY No. 1: Improve function and connectivity within neighborhoods and districts.

- **Policy UD 1-1:** Support the goals, strategies, and policies of the General Plan Elements.
- **Policy UD 1-2:** Focus development and supporting infrastructure improvements within targeted Areas of Change identified within the Land Use Element.
- **Policy UD 1-3:** Promote the adaptive reuse and appropriate infill of resources within the existing urban fabric.
- **Policy UD 1-4:** Focus on building flexible design on ground floors to allow for active building frontages along corridors and at the street level.
- **Policy UD 1-5:** Prioritize and revitalize streetscapes in existing neighborhoods and targeted areas of change to provide well-lit streets, continuous sidewalks, consistent paving treatment and improved crosswalks at intersections.
- **Policy UD 1-6:** Identify streets that can be reconfigured to accommodate a variety of improvements, such as wider sidewalks with trees, bike paths, dedicated transit lanes, and landscape medians or curb extensions that make the streets more attractive and usable, consistent with Complete Streets principles.
- **Policy UD 1-7:** Employ timeless and durable materials in streetscape designed amenities.
- **Policy UD 1-8:** Promote universal design in public and private development to ensure accessibility for people of all abilities.

Since 2012, Long Beach has installed over 130 miles of bike trails and over 1,200 bike racks.

Improve functionality in sidewalk uniformity, streetscape paving , landscaping, and lighting.



Improved Appearance

STRATEGY No. 2: Beautify and improve efficiency of corridors, gateways, and private and public spaces.

- **Policy UD 2-1:** Encourage a mix of building forms that embrace key historic resources of a neighborhood, encouraging architectural preservation and allowing for innovative renovations to older structures that will contribute to neighborhood character.
- **Policy UD 2-2:** Remove or screen visual pollution, including amortizing blighting conditions.
- **Policy UD 2-3:** Promote enhancement of the built environment through façade improvements, quality and context-sensitive infill development, and landscaping.
- **Policy UD 2-4:** Incorporate aesthetic elements such as pedestrian lighting, gateway landscape treatment, and ornamental landscaping throughout the City.
- **Policy UD 2-5:** Building elements and landscaping should screen items such as above-ground wires, communication boxes, back-flow preventers, and electric transformers that create visual distractions.
- **Policy UD 2-6:** Prioritize aesthetic considerations in the refinement of development standards to enhance the quality of new and existing developments within scenic areas and iconic sites.
- **Policy UD 2-7:** Identify, protect, and enhance designated scenic routes and iconic sites described in Public Spaces in this Chapter.
- **Policy UD 2-8:** Minimize visual clutter that detracts from an overall positive experience of a pedestrian. This would include regulating signage and the use of electronic signs and billboards (which may be appropriate in certain urban locations more than others).
- **Policy UD 2-9:** Encourage the use of aesthetically designed common trash enclosures in alleys for multiple businesses to create more attractive and walkable environments.

STRATEGY No. 3: Support distinct and attractive neighborhoods that are dynamic, active, and engaging.

- **Policy UD 3-1:** Preserve important neighborhood characteristics that create a sense of place, including buildings, landmarks, development patterns, design features and materials, streetscapes, signs, landscaping, public amenities, and open spaces.
- **Policy UD 3-2:** Work with neighborhood groups and business associations throughout the City to develop and implement local neighborhood improvement plans.
- **Policy UD 3-3:** Encourage collaboration among local neighborhood residents, businesses, places of worship, schools, and service providers to build neighborhood cohesiveness, foster neighborhood improvements, and promote appropriate infill and regeneration of existing neighborhoods.

Wide sidewalks create opportunity for a lively and engaging walkable environment.

Improved Health and Sustainability

Long Beach values the health and wellness of its City and residents. With a rise in obesity and other diseases that result in unhealthy lifestyles and diet, the following strategies and policies present opportunities for designing buildings, neighborhoods, streets, and outdoor spaces that encourage active transportation and recreation, and provide greater accessibility to healthy foods and services.

STRATEGY No. 4: Promote and support programs and projects that support physical activity and social engagement.

- **Policy UD 4-1:** Follow the guidelines in the "Healthy Communities Policy" adopted by the City Council on October 14, 2014.
- **Policy UD 4-2:** Support the goals and programs of the Sustainable City Action Plan (see Conservation chapter and appendix) to promote, educate, and provide leadership on sustainable planning and development.
- **Policy UD 4-3:** Provide locations for amenities and uses that encourage community interaction and healthy lifestyles such as farmers' markets, demarked walking routes, street festivals, and performing spaces.
- **Policy UD 4-4:** Identify opportunities for "walking loops" through neighborhoods that provide easy-to-follow routes (with average walking time and distances noted) for exercise and pleasure.

STRATEGY No. 5: Integrate healthy living and sustainable design practices and opportunities throughout Long Beach.

- **Policy UD 5-1:** Provide opportunities for public access to fresh food through the encouragement of urban agriculture, edible sidewalks, and community gardens.
- **Policy UD 5-2:** Encourage provision of housing opportunities, goods & services, and amenities for all income and age groups with opportunities to age in place within complete neighborhoods developed through Strategy No. 10 (Complete Neighborhoods) of the Land Use Element and Strategy No. 16 (Complete the Neighborhood) of the Urban Design Element.
- **Policy UD 5-3:** Provide a range of passive and active areas that promote safe, healthy places for exercise, recreation, family gatherings, and respite within walking distance of all neighborhoods.
- **Policy UD 5-4:** Preserve, rehabilitate, and integrate existing buildings into new development projects wherever feasible to encourage adaptive reuse, reduce waste, and maintain local character.
- **Policy UD 5-5:** Accommodate space for the use of rooftop solar panels and other forms of renewable energy on buildings, underutilized sites, utility plants, and parking facilities through a simplified permitting process, wherever feasible.
- **Policy UD 5-6:** Encourage the establishment of electric vehicle charge points and other alternative fuel accommodations at new public and private projects and suitable locations throughout the City.
- **Policy UD 5-7:** Collect and filter "first flush" stormwater with innovative parkways, naturalized drainage swales, green drainage systems, bioswales, and planter boxes in order to minimize run-off.
- **Policy UD 5-8:** Use permeable paving, wherever appropriate, for sidewalks or on-street parking stalls, parking lots, and other public space areas that would normally be paved.
- **Policy UD 5-9:** Increase the number of greenwalls, bioswales, green roofs, green parkways and medians, and other methods of greening the environment.
- **Policy UD 5-10**: Support infrastructure improvements that attract light industrial and clean manufacturing uses, green technology uses, clean energy-related businesses, research, and development.

Urban community gardens provide access to locally grown foods and promote healthy eating options.

STRATEGY No. 6: Improve public infrastructure to serve new development, established neighborhoods, commercial centers, and industry and regional-serving facilities within areas of change and future growth areas.

- **Policy UD 6-1:** Prioritize improvements to remedying infrastructure, public facilities, and service deficiencies to underserved neighborhoods and business hubs.
- **Policy UD 6-2:** Continue to make strategic investments in communication networks, e-government initiatives, Wi-Fi initiatives, infrastructure systems, and other forms of smart city technologies aimed at improving municipal services efficiencies and cost effectiveness.
- **Policy UD 6-3:** Maintain adequate and sustainable infrastructure systems to protect and enhance the health and safety of all Long Beach residents, businesses, institutions, and regional serving facilities.
- **Policy UD 6-4:** Promote sustainability through the use of new technologies and green infrastructure to upgrade city infrastructure systems and equipment. Prioritize areas to retrofit with green infrastructure, Low Impact Development, and Best Stormwater Management Practices.
- **Policy UD 6-5:** Ensure buildings meet the City's requirements for sustainability and green development, both for construction and operation.

STRATEGY No. 7: Provide safe and secure neighborhoods, streets, buildings, parks, and plazas.

- **Policy UD 7-1:** Encourage public amenities and spaces in neighborhoods that allow for human contact, social activities, and community involvement to create an "eyes on the street" environment.
- **Policy UD 7-2:** Accommodate appropriate traffic calming measures in neighborhoods to slow vehicle speeds along streets and at intersections.
- **Policy UD 7-3:** Incorporate Crime Prevention Through Environmental Design (CPTED) strategies to influence offender decisions prior to criminal acts such as:
  - Promoting opportunities for natural surveillance to increase the perception that people can be seen by designing the placement of physical features, activities, and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space.
  - Encouraging the incorporation of natural access control limits to clearly differentiate between public space and private space by selectively placing entrances and exits, fencing, lighting, and landscape to limit access or control flow.

Porches provide surveillance and positive social interaction among users of private and public space.

Economic Resilience

STRATEGY No. 8: Capitalize on urban design techniques that support economic development, prosperity, and the preservation of existing businesses throughout the community.

- **Policy UD 8-1:** Create flexible, business-friendly regulations that support economic development.
- **Policy UD 8-2:** Provide flexibility in building form and site design to encourage development that supports economic activity, entrepreneurship, and small businesses.
- **Policy UD 8-3:** Enhance walkable streets and neighborhoods to create pedestrian-friendly environments that support business vitality.
- **Policy UD 8-4:** Prioritize the use of redevelopment strategies on corridors that do not reflect the adjacent neighborhoods they serve, that feature obsolete uses, or that detract from private investment.
- **Policy UD 8-5:** Promote unique and local businesses and start-up companies that support the growth and economic development strategies of the City.
- **Policy UD 8-6:** Develop building types and forms with reduced servicing costs and reduced environmental footprints.
- **Policy UD 8-7:** Continue to seek methods of growing the City's revenue base through support of local business.

Douglas Park.

The Salon.

At Last Cafe.

Social and Cultural Vitality and Diversity

STRATEGY No. 9: Protect and enhance historic resources, distinguishing architecture, and other features that contribute to the unique character and identity of each neighborhood.

- **Policy UD 9-1:** Identify and preserve historic buildings that enhance a historic district or are classified as a contributing structure.
- **Policy UD 9-2:** Protect districts that are part of the City's history and possess a unique neighborhood character.
- **Policy UD 9-3:** Identify, preserve, and enhance scenic areas and iconic sites. See Map UD-1, Historic Sites.

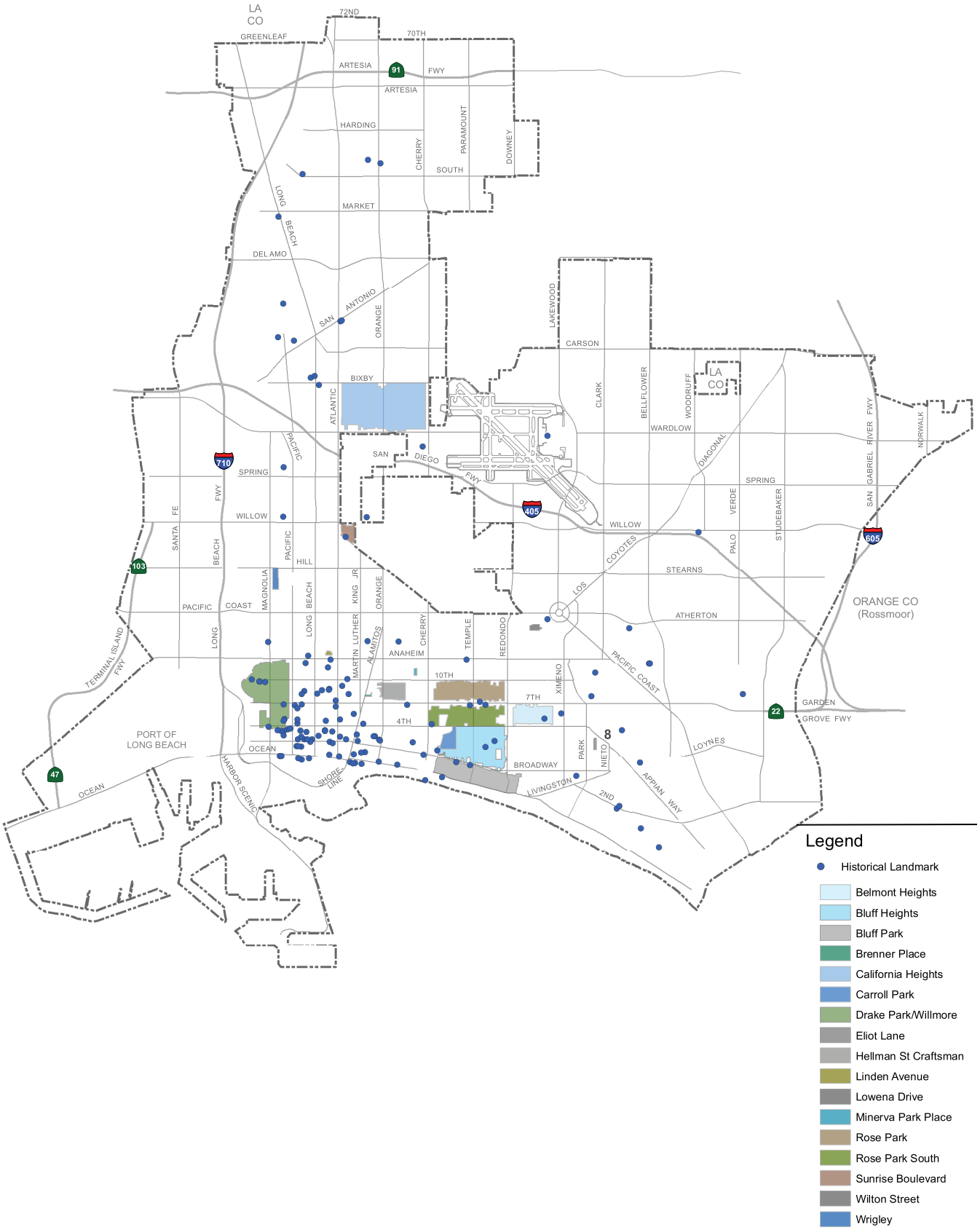
STRATEGY NO. 10: Celebrate diverse and unique cultural influences through architectural style, public art, public spaces, markets, fairs, and streetscape furnishings.

- **Policy UD 10-1:** Embrace the cultural diversity and heritage prevalent within Long Beach through public art, signage, and preservation of historic structures.
- **Policy UD 10-2:** Collaborate with regional artists, residents, and community members during the design process to infuse public art and cultural amenities into a project.
- **Policy UD 10-3:** Provide incentives and encourage the renewal of historic buildings so they can continue to remain an asset to strengthen a neighborhood's individual character in the future.

Linden Avenue Historic District.

Historic home on Ocean Boulevard along Bluff Park.

Map UD-1
HISTORIC SITES MAP



Public Art

STRATEGY No. 11: Integrate public art into the urban fabric of the City.

- **Policy UD 11-1:** Incorporate public art and cultural amenities as community landmarks, encouraging public gathering and wayfinding, large and small.
- **Policy UD 11-2:** Utilize public art to enhance pedestrian environments, such as sidewalks, paseos, plazas, and alleys.
- **Policy UD 11-3:** Incorporate public art either as stand-alone installations or integrated into the design of other urban improvements, such as bridges, on-ramps, public building murals, paving, benches, and street lights.
- **Policy UD 11-4:** Encourage the integration of localized art that add to the interest and nuance of the City's neighborhoods and showcase local identity and history.
- **Policy UD 11-5:** Consider opportunities to add whimsical elements to the environment by incorporating art into street furnishings.
- **Policy UD 11-6:** Encourage expression of cultural heritage within art and public spaces.

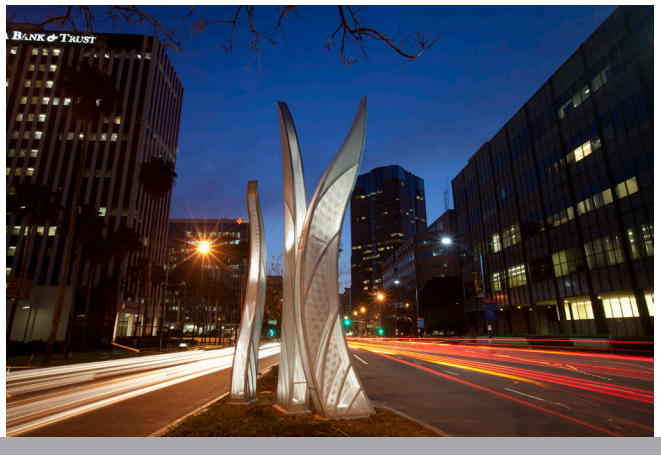
Signs and Wayfinding

STRATEGY No. 12: Expand the unified sign program, within the Areas of Change identified in the Land Use Element, to help orient visitors throughout the community. Include freeway identification, gateways, directional signs, and informational signs.

- **Policy UD 12-1:** Focus investment on improving the appearance of entrances to the City on major boulevards so that wayfinding, landscape, and lighting are integrated into a cohesive design.
- **Policy UD 12-2:** Develop a comprehensive approach to wayfinding for visitors and tourists who will enter the City at these gateways, including neighborhood entry signs and murals.
- **Policy UD 12-3:** Promote the use of new technology, such as mobile applications, interactive kiosks, and digital parking systems within public wayfinding and signage programs.
- **Policy UD 12-4:** Emphasize gateways into Long Beach at freeways and important transportation hubs, such as the Long Beach Airport, Blue Line stations, and the Long Beach Cruise Terminal, and at arrival points of distinct neighborhoods and districts, through landscaping, architecture, street furniture, and appropriate signage.
- **Policy UD 12-5:** Utilize neighborhood identity and wayfinding signage to establish an identity or theme within an existing neighborhood.
- **Policy UD 12-6:** Provide wayfinding signage on 7th Street to provide direction to attractions and neighborhoods from State Route 22 and the 605 and 710 Freeways.

Urban Lab: Chantilly Clad Public Art Installation.

Seagrass photo by Thomas McConville.



Urban Fabric

This section describes the City's built environment and helps readers understand what urban design means in Long Beach. It describes the City's man-made and natural features, the evolution of its built environment, its place in the region, and how its components interact to create the day-to-day human experience of the City.

The public realm is comprised of six major elements within our view range as a pedestrian: the street, curb zone, landscaping, walking zone, setbacks, and the street wall created by buildings. The street itself could include parking stalls, bike lanes, travel lanes, and medians. These elements work together to establish the character of the street, and in turn, the neighborhood. How we utilize this public resource and its relationship to the private realm is critical to the livability of neighborhoods.

Neighborhoods/Community Building Blocks

STRATEGY No. 13: Create and maintain complete neighborhoods.

- **Policy UD 13-1:** Incentivize neighborhood improvements to increase walkable/bikeable access to daily needs, goods/services, and healthy foods, reduce blight, and create safe places to play and congregate.
- **Policy UD 13-2:** Neighborhood amenities, such as coffee shops, restaurants, and convenience stores, shall be located within a 10-minute walk or a short bike ride from residents to the greatest extent possible.
- **Policy UD 13-3:** Encourage new development projects to provide safe pedestrian access to public sidewalks, bus and rail transit facilities, and the bicycle network.
- **Policy UD 13-4:** Implement streetscape improvements along the major cross-town corridors using a comprehensive approach to the corridor's sidewalks, landscaping, lighting, and amenities that reflect the individual neighborhoods along the corridor.

Bicycle lane provides connectivity through neighborhoods.

Streetscape improvements include: widening sidewalks, providing access to transit, streetscape furnishings, street trees, and enhanced landscaping.

East Village Creative Offices improved a neighborhood by converting existing buildings into a unique adaptive reuse project, incorporating offices around an interior paseo.

Building Form and Development

STRATEGY No. 14: Building types and forms should contribute to the PlaceType they are sited within and should address potential conflicts between neighboring PlaceTypes by implementing buffering measures and thoughtful design patterns.

» **Policy UD 14-1:** Properly scale a building's form (i.e., height and massing) to the primary street it fronts on (i.e., taller buildings on larger boulevards, smaller buildings on narrower streets).

» **Policy UD 14-2:** Acknowledge transitions between commercial and residential uses by requiring new development in higher-density centers and corridors to transition in height, massing, scale, and intensity in a thoughtful way to provide a buffer to lower density residential development.

» **Policy UD 14-3:** Allow new development projects to respond to their particular context and experiment with alternative development patterns while complementing their PlaceTypes.

» **Policy UD 14-4:** Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on the residential living environment.

» **Policy UD 14-5:** Promote commercial center and corridor development compatibility with adjacent residential uses, including ensuring that project design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, building massing, signage, lighting, trash enclosures, and noise generating uses and areas.

» **Policy UD 14-6:** Ensure new development respects the privacy concerns of adjoining properties and buildings. Building, window, and balcony orientation should maximize views while preserving the privacy of surrounding neighbors by considering direct sight lines to windows and/or outdoor living spaces on neighboring lots. Minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.

» **Policy UD 14-7:** Utilize building form and development strategies in conjunction with PlaceTypes and the interface between buildings and the streets (Strategy 34-35) to create a comprehensive urban fabric.

» **Policy UD 14-8:** Avoid street walls where it will adversely affect the existing character (i.e., scale, dominant style, historic features) of a neighborhood or street face.

» **Policy UD 14-9:** In residential areas, support development which blends the form, mass, and profile of individual homes with the natural terrain and neighborhood context in order to minimize the visual impact on the site and surrounding neighborhood.

The Long Beach Senior Arts Colony is within a block of the Anaheim Street Metro Blue Line Station.

Court Street retail project converted a parking lot into a retail destination respecting the form and character of buildings in Downtown San Luis Obispo.

Compact Urban and Infill Development

STRATEGY No. 15: Consider vacant parcels as infill opportunities.

- **Policy UD 15-1:** Encourage new projects to repair the urban fabric where it has eroded (e.g., reestablishing a uniform street wall where it once existed, but where buildings have been demolished over time).
- **Policy UD 15-2:** Promote infill projects that support the designated PlaceType and be appropriate in their use, scale, compactness of development, and design character with adjacent sites and nearby existing development.
- **Policy UD 15-3:** Prioritize improvements identified within the Mobility Element and Capital Improvement Plans.

STRATEGY No. 16: "Complete the neighborhood" by filling in gaps (e.g., functional needs like housing, new or missing services, new public amenities or services, healthy food options, flexible uses on larger streets and fostering a safe walkable environment within each PlaceType.).

- **Policy UD 16-1:** Provide opportunities for mixed use development within focused locations (areas of change and target areas) to provide opportunities for live-work, affordable and mixed-income housing, and commercial and residential mixes in a medium to high density setting.
- **Policy UD 16-2:** Continue to develop the Downtown into a city center that provides compact development, accommodates new growth, creates a walkable environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.
- **Policy UD 16-3:** Focus new development with the greatest intensity and broadest mix of uses, along transit-supportive corridors, downtown, and near transit stations.
- **Policy UD 16-4:** Promote safe, complete neighborhoods through a mix of uses and activities that create a 24/7 live, work, play atmosphere.
- **Policy UD 16-5:** Incorporate Crime Prevention Through Environmental Design (CPTED) strategies into the design and development of populated areas.
- **Policy UD 16-6:** Create natural surveillance by placing physical features, activities, and people in a way that maximizes visibility and fosters positive interaction among users of private and public space.

Pizzanista brought life to an abandoned home providing a local serving restaurant to the neighborhood.

Burnett Apartments is an example of infill development on Long Beach Boulevard, providing housing in close proximity to public transit.

Downtown Long Beach office high-rise buildings.

- **Policy UD 16-7:** Design natural access control to building entrances and exits, fencing, lighting, and landscape to limit access or control flow.
- **Policy UD 16-8:** Promote territorial reinforcement by using buildings, fences, pavement, signs, lighting and landscape to express ownership and define public, semi-public, and private space.
- **Policy UD 16-9:** Ensure properties are maintained and promote the health and visual quality of environments to deter crime.

Natural Area and Parks to Built Area

STRATEGY No. 17: Define boundaries between natural areas, parks, and built areas.

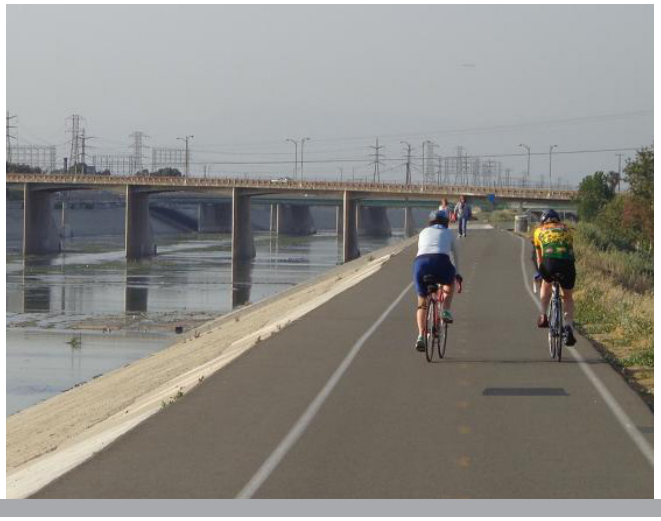
- **Policy UD 17-1:** Restrict development from encroaching into natural areas to protect viewsheds and access to public space.
- **Policy UD 17-2:** Enhance linkages and access points with lighting and signage.
- **Policy UD 17-3:** Establish appropriate buffers between natural resources and the built environment.
- **Policy UD 17-4:** Wetlands and passive and active utility corridors should incorporate buffers and screening as transitions to urban areas.

Gateway at Promenade Square.

Los Angeles River Bikeway extends to the Downtown Marina and Shoreline Aquatic Park Bike Trail.

Pacific Electric right-of-way with adjacent Orizaba Park.

Los Angeles River Bicycle Path.



Scenic Routes and Iconic Sites

The City has a number of key aesthetic resources and viewsheds that are worthy of protection and enhancement. These resources include roadways of particular visual merit and viewpoints that are highlighted by iconic buildings or vistas of the highest and most inspiring quality.

STRATEGY No. 18: Improve and preserve the unique and fine qualities of Long Beach to strengthen the City's image and eliminate undesirable or harmful visual elements.

- **Policy UD 18-1:** Carefully consider the development of iconic sites with visual corridors or structures of the highest visual and architectural quality.
- **Policy UD 18-2:** Expand the existing network of scenic routes to include additional routes, corridors, and sites.
- **Policy UD 18-3:** Establish guidelines and zoning overlays, as appropriate, to regulate development within scenic areas and for iconic sites.
- **Policy UD 18-4:** Prioritize aesthetics to enhance the quality of new and existing developments within scenic areas and iconic sites.
- **Policy UD 18-5:** Include aesthetic design considerations for all roadway and appurtenances within scenic areas.
- **Policy UD 18-6:** Remove or screen visual pollution, including amortizing blighting conditions.
- **Policy UD 18-7:** Increase the visibility and awareness of visual resources through promotional materials to all segments of the population.
- **Policy UD 18-8:** Increase governmental commitment to the designation of scenic routes and the protection of scenic resources, and create and maintain a system of scenic routes through joint public and private responsibility.
- **Policy UD 18-9:** Link and enhance significant recreational, cultural, and educational opportunities through a network of scenic corridors.
- **Policy UD 18-10:** Follow the principles of the former scenic highways element, now incorporated into the General Plan as part of street character change (Mobility Element, Page 89, Map 16), and as part of the Street Design Manual, implementation measure MOP IM-1, Page 122.

Remnants of the Cyclone Racer at The Pike

Iconic sign above the former Boeing 717 aircraft assembly building.

PlaceTypes

This section focuses on the form and character of neighborhoods and community-scaled districts throughout the City. Emphasis is placed on development patterns, streetscapes, and urban form components of the urban environment, rather than specific uses of property and traditional land use regulatory approaches, with the goal of creating visually interesting, viable, and functional places for people.

The Promenade located within the Downtown PlaceType.

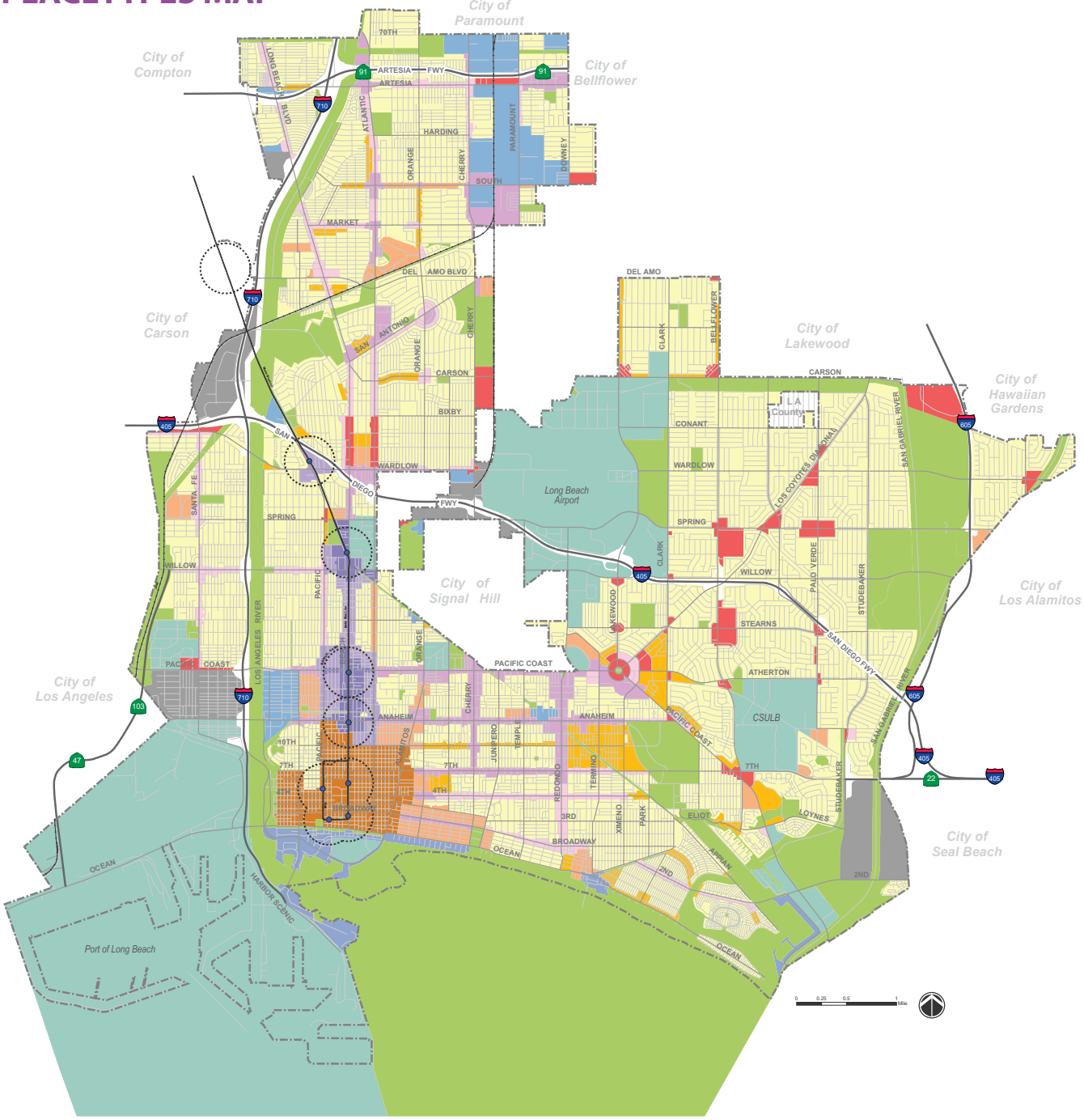
Ten PlaceTypes have been identified that provide a comprehensive way of thinking about the City of Long Beach and the urban design relationships of its many components, consisting of:

- Founding and Contemporary Neighborhood;
- Multi-Family Residential - Low and Moderate;
- Neighborhood-Serving Centers and Corridors - Low and Moderate;
- Transit-Oriented Development - Low and Moderate;
- Community Commercial;
- Industrial;
- Neo-Industrial;
- Regional-Serving Facility;
- Downtown; and
- Waterfront.

Each PlaceType includes bird's-eye view diagrams and cross sections to illustrate how each PlaceType might evolve over the years.

Urban design strategies strive to improve the pedestrian experience, functionality, and character of each PlaceType.

Map UD-2
PLACETYPES MAP



Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

Founding and Contemporary Neighborhood PlaceType

Development Pattern. The Founding and Contemporary Neighborhood PlaceType is defined by low-density residential neighborhoods, from older street car urban neighborhoods (Founding Neighborhoods) to post-World War II suburban housing tracts (Contemporary Neighborhoods) of predominantly single-family homes. This PlaceType promotes the maintenance of established single-family homes, while allowing neighborhood edges, transition areas, and key intersections to have appropriately scaled multifamily structures, public facilities, and small-scale, neighborhood -serving, commercial uses.

STRATEGY No. 19: Protect and enhance established Founding and Contemporary Neighborhood PlaceType.

- **Policy UD 19-1:** Encourage new construction, additions, renovations, and infill development to be sensitive to established neighborhood context, historic development patterns, and building form and scale.
- **Policy UD 19-2:** Ensure that project site design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, signage, lighting, trash enclosures, and sound systems.
- **Policy UD 19-3:** Support new development that is designed to respect the height, massing, and open space characteristics of the existing neighborhood while creating the appearance of single-family units for multifamily buildings to allow for better integration.
- **Policy UD 19-4:** Promote the uniqueness of each neighborhood through preservation of mature trees, historic structures, fine-grained architectural detail, appropriate building scale, and cultural amenities that are key to the neighborhood's identity and help create a uniform streetscape.
- **Policy UD 19-5:** Provide shade trees to match the existing species to reinforce neighborhood identity, to add greenscape for texture, shade and overall visual character, and to create a uniform streetscape. Maintain consistent wall and fence treatment along the street edge.
- **Policy UD 19-6:** Encourage the use of appropriately sized, landscaped roundabouts in concert with other traffic calming measures to create a pedestrian-friendly, safe environment.
- **Policy UD 19-7:** Promote opportunities for improved transit connectivity for neighborhoods originally designed around the streetcar.
- **Policy UD 19-8:** Provide better connections to these neighborhoods by improving bikeways and pedestrian paths, especially along the arterial streets. Capture opportunity for pedestrian paths to improve walkability (e.g., utility easement, vacant parcels).
- **Policy UD 19-9:** Encourage streets to be repurposed to accommodate slower speeds and better serve pedestrians, cyclists, and local transit where the City Transportation Engineer determines that streets are overdesigned for estimated traffic loads.
- **Policy UD 19-10:** Preserve and maintain alleys, which provide access to garages in the rear.
- **Policy UD 19-11:** Ensure access to local serving commercial retail (i.e., dining, coffeehouses) at the periphery to serve residents.

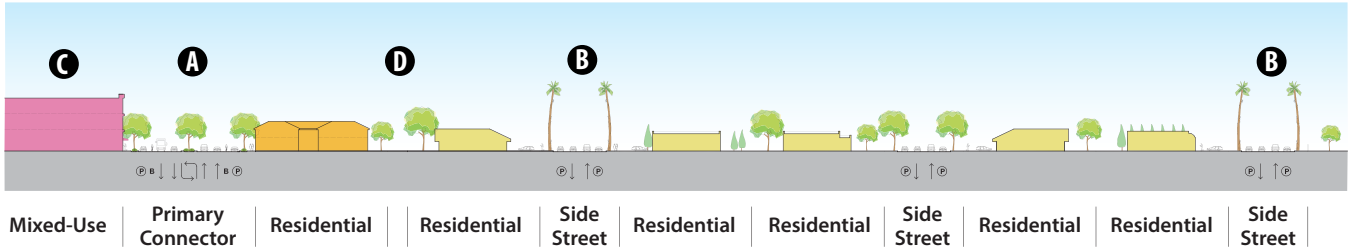
Figure UD-1: Founding and Contemporary Neighborhood Bird's Eye View

A ***Enhance connections and accessibility.***

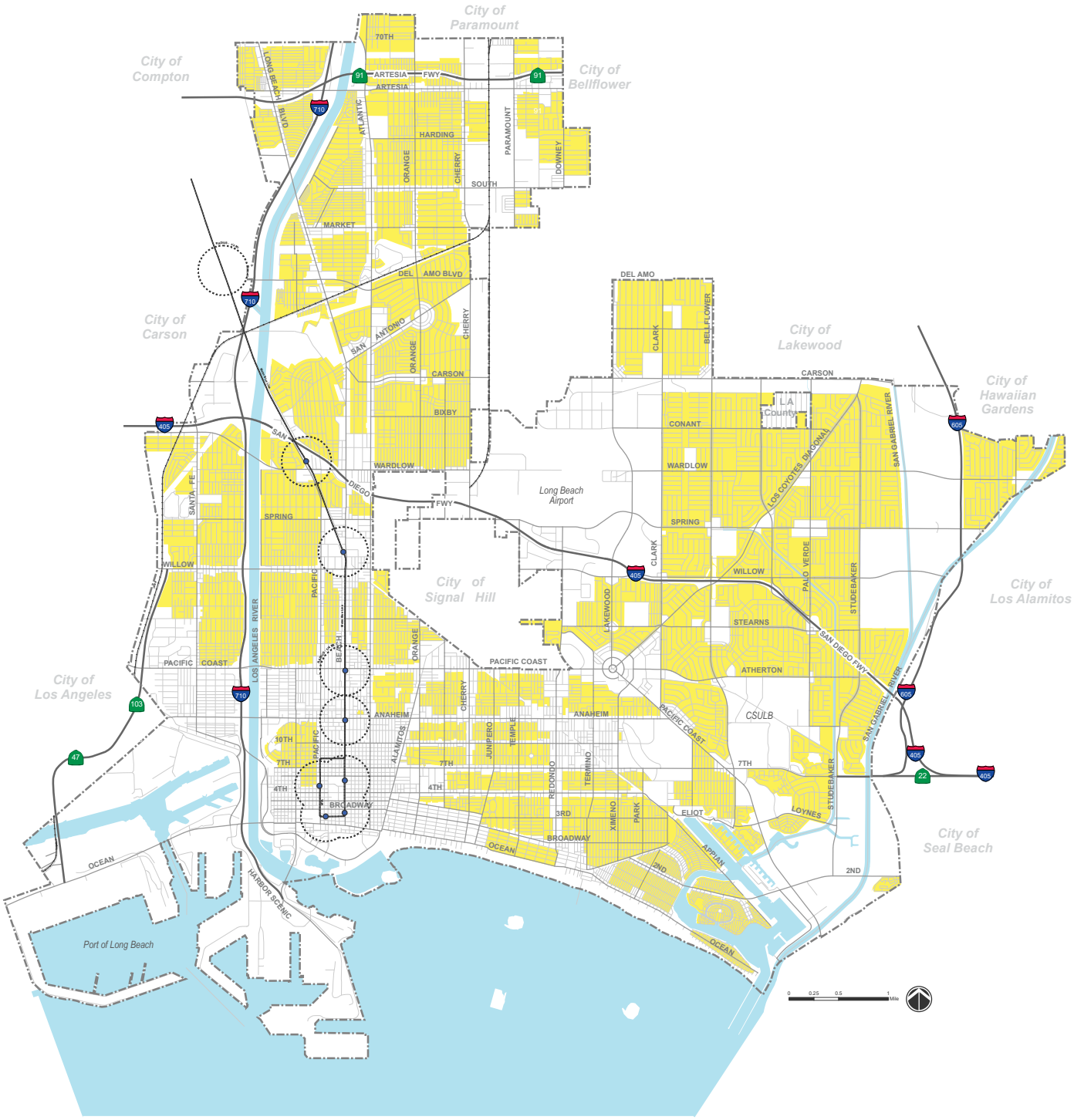
B ***Preserve and enhance streetscape.***

C ***Ensure neighborhood amenities are within a walkable proximity (i.e., parks, public facilities, commercial, transit).***

Figure UD-2: Founding and Contemporary Neighborhood Cross Section



Map UD-3
FOUNDING AND CONTEMPORARY NEIGHBORHOOD PLACETYPE MAP



Legend

PlaceTypes

N - Founding and Contemporary Neighborhoods

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Founding and Contemporary Neighborhood PlaceType

The following graphics provide guidance on residential building types within Founding and Contemporary Neighborhood PlaceType. Refer to the Land Use Element for development standards (i.e., setbacks, height, FAR, lot coverage, garage location, parking). Maintaining a consistent building typology within neighborhoods will unify and enhance a neighborhood's character.

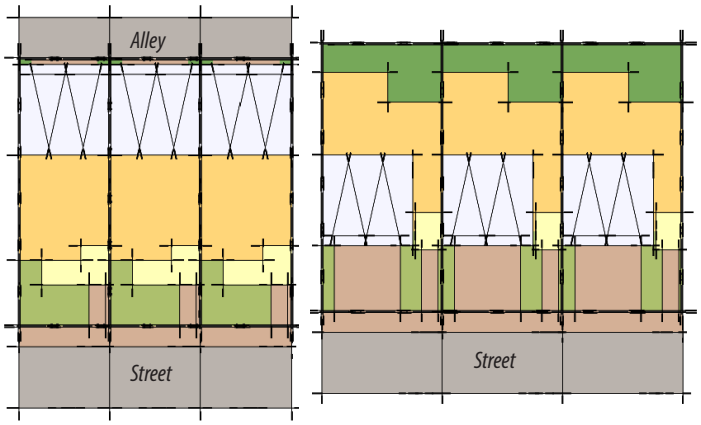
Note: * Verify with City that Row House and Duplex building types are allowed within Founding and Contemporary Neighborhood PlaceType.

Figure UD-3: Founding and Contemporary Neighborhood Building Types

Traditional Single-Family Lot

Traditional Single-Family

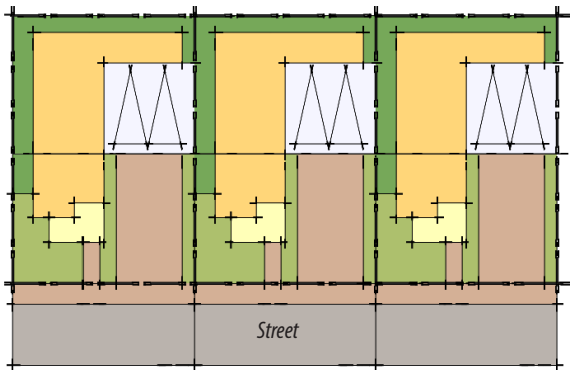
- Setbacks on all sides
- Porch facing the street
- Garage accessed off of street or alley
- Typically one (1) to two (2) stories in height
- Rear yard for private open space



Row House

Row House*

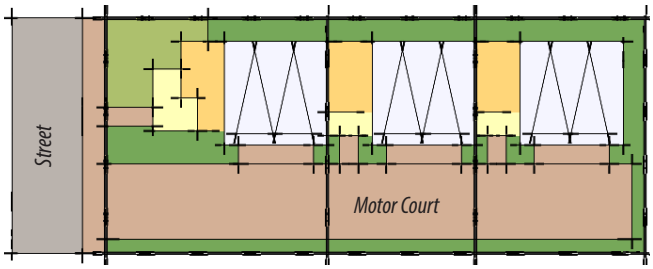
- Front yard setback, otherwise units attached on sides
- Porch facing the street
- Garage accessed off of private drive, street, or alley
- Typically two (2) to three (3) stories in height.
- Small rear yard, front patio, or deck for private open space



Zero Lot Line

Zero Lot Line

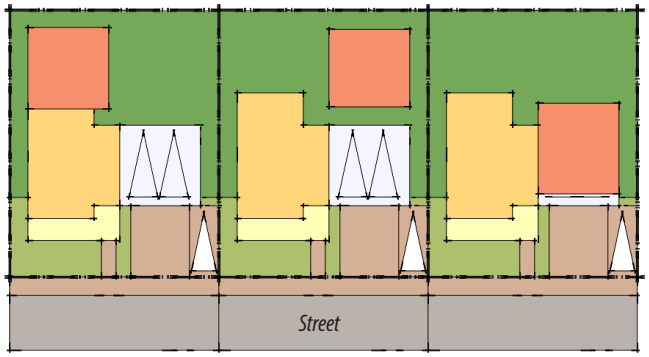
- Setbacks on three (3) sides, one (1) side built on property line
- Porch facing the street or motor court
- Garage accessed off of street or alley in the rear half of lot
- Typically one (1) to two (2) stories in height
- Rear or side yard for private open space
- Smaller lot gives similar amenities as Traditional Single-Family
- Modified construction techniques such as fewer windows, required at zero setback



Small Lot Development

Small Lot Development

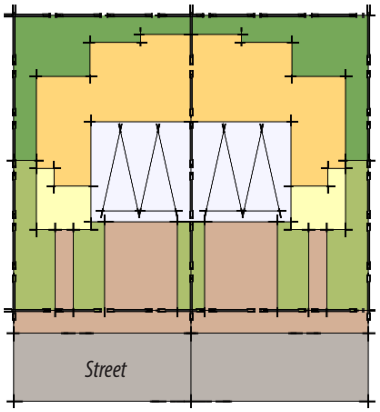
- Setbacks on all sides, but not internal to original lot
- Porch facing the street or motor court
- Garages, surface space, or carports accessed off of motor court on shared driveway
- Typically two (2) to three (3) stories in height
- Small side yards or decks for private open space
- Multiple "postage stamp" lots provide individual ownership with higher density



Secondary Dwelling

Secondary Dwelling

- Setbacks on all sides, typically associated with Traditional Single-Family Lots
- Private entry, potentially around side yard, rear yard, or above garage.
- Parking is required for units greater than 450 sq. ft. Provide parking in main driveway or side yard, tandem parking not permitted
- Typically one (1) story in height (maybe located on second floor)
- Small private yard or deck for private open space for each dwelling unit



Duplex

Duplex*

- Setbacks on front and rear, but common walls between units
- Porch facing the street
- Garage accessed off of street or alley
- Typically one (1) to two (2) stories in height
- Rear yard for private open space
- Single-family amenities with smaller lot size
- Can be single ownership or individual

Multi-Family Residential - Low and Moderate PlaceTypes

Development Pattern. The Multi-Family Residential - Low and Moderate PlaceTypes promotes well-designed infill housing where multi-family residential already exists or where residents would be well-served by proximity to commercial and bus and rail transit services. Designs should contribute to walkable streets by incorporating pedestrian-oriented building frontages, balancing building massing with usable on-site open space, allowing edge transitions, accommodating mixed-use building approaches where commercial services are lacking, and providing innovative multi-family housing options that address the needs of our residents at all stages in their lives.

STRATEGY No. 20: Protect and enhance established Multi-Family Residential - Low and Moderate PlaceTypes.

- **Policy UD 20-1:** Integrate Multi-Family Residential - Low and Moderate PlaceType neighborhoods with surrounding uses to encourage appropriate transitions in height and massing.
- **Policy UD 20-2:** Encourage the design of multi-family buildings to relate to and reflect the surrounding context, whether it is historic or of a recognizable design era.
- **Policy UD 20-3:** Encourage the design of multi-family buildings along major corridors and near transit areas to increase density over existing conditions to encourage investment and development of infill sites.
- **Policy UD 20-4:** Encourage all development to exhibit a high standard of design and materials, to maintain privacy standards, and to provide public frontages that contribute to the larger street and block character.
- **Policy UD 20-5:** Preserve the existing urban fabric through preservation of mature trees, historic structures, and cultural amenities.
- **Policy UD 20-6:** Provide traffic calming measures such as roundabouts or narrowed intersections, where appropriate, to slow automobile speeds and allow pedestrians and cyclists to safely share the street.
- **Policy UD 20-7:** Encourage walk-up entries, patios, and balconies to maintain "eyes on the street" and encourage active ground floor uses along major street frontages.
- **Policy UD 20-8:** Provide access to parking/loading from alleys or side streets to minimize curb cuts along the main street.

Multi-Family Residential - Low: Three-story townhomes.

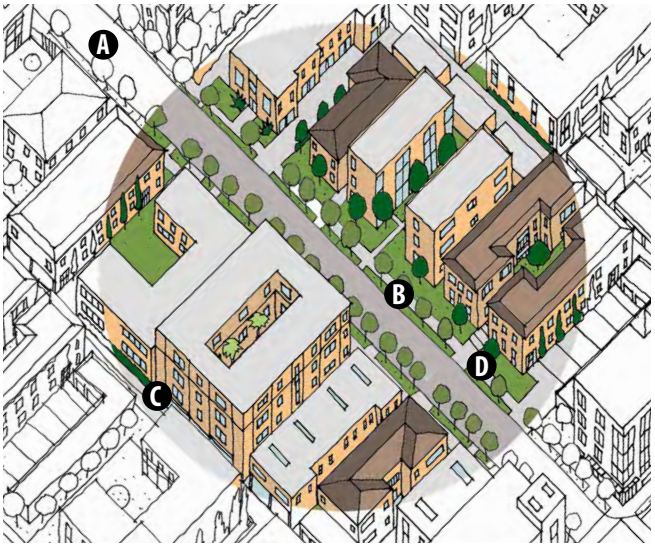


Figure UD-4: Multi-Family Residential Bird's-Eye View

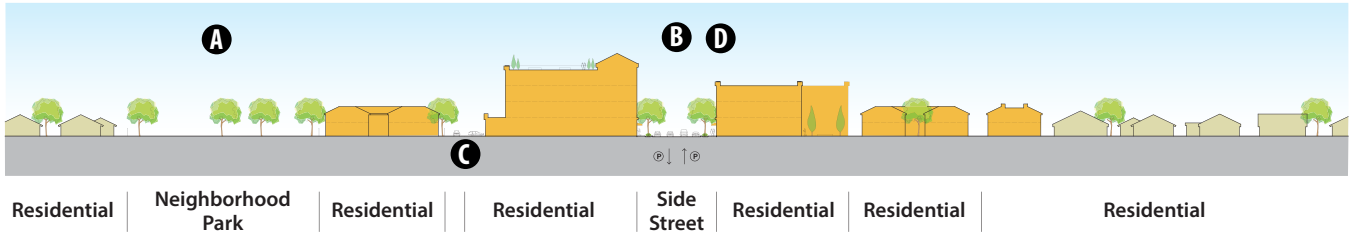
A ***Ensure neighborhood amenities are within walkable proximity (i.e., parks, public facilities, commercial, transit).***

B ***Preserve and enhance streetscape character and connections.***

C ***Provide off-street parking to alleviate on-street parking demands. Provide bicycle parking facilities to encourage bicycle use.***

D ***Encourage streetscape furnishings and amenities.***

Figure UD-5: Multi-Family Residential Cross Section



Map UD-4
MULTI-FAMILY RESIDENTIAL - LOW AND MODERATE PLACETYPES MAP

Legend

PlaceTypes

Multi-Family Residential

- MFR-L - Multi-Family Residential - Low
- MFR-M - Multi-Family Residential - Moderate

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes

Development Patterns. The Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes are defined by low and moderately-scaled neighborhood serving development encompassing a mix of non-residential uses. This PlaceType is typically located near single-family neighborhoods with a tighter street grid. The majority of more moderately dense Neighborhood-Serving Centers and Corridors are concentrated in the central area of the City along Broadway, Fourth Street, Seventh Street and along Anaheim Street, between Alamitos Avenue and Redondo Avenue. Less intense Neighborhood Serving Centers and Corridors are found in segments along North Long Beach Boulevard, North Atlantic Avenue, and on Willow Street, west of Pacific Avenue.

STRATEGY No. 21: Protect and enhance established Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes.

- **Policy UD 21-1:** Promote the concentration of mixed uses and higher building intensity nearest the center of the PlaceType and adjacent to transit stations, with housing or lower scale buildings at the periphery.
- **Policy UD 21-2:** Encourage gateway elements that help define neighborhood edges and provide transitions into center development along lengthy corridors.
- **Policy UD 21-3:** Promote pedestrian activity by establishing well-designed streetscapes, active ground floor uses, and tree-canopied sidewalks that are unique to the individual neighborhood and transit stations.
- **Policy UD 21-4:** Ensure signage, lighting, and other potential nuisances are selected with a sensitivity to existing residential neighbors.
- **Policy UD 21-5:** Enhance transit stops with transit shelters and furnishings to better serve shoppers and residents.
- **Policy UD 21-6:** Provide neighborhood-serving uses, parks, and transit connections within a 1/4-mile radius of a Neighborhood-Serving Centers and Corridors - Low and Moderate PlaceTypes.
- **Policy UD 21-7:** Provide courtyards, paseos, and public plazas that provide needed open space and encourage walking and socializing at the heart of a neighborhood -serving center or transit stations. Provide adequate open space as density increases.
- **Policy UD 21-8:** Provide access to parking/loading from alleys or side streets to minimize curb cuts along the main boulevard where pedestrian activity will be the heaviest. Require a well-designed interface between pedestrians, bicyclists, and transit users. Bicycle facilities and pedestrian amenities should be integrated throughout the PlaceType.

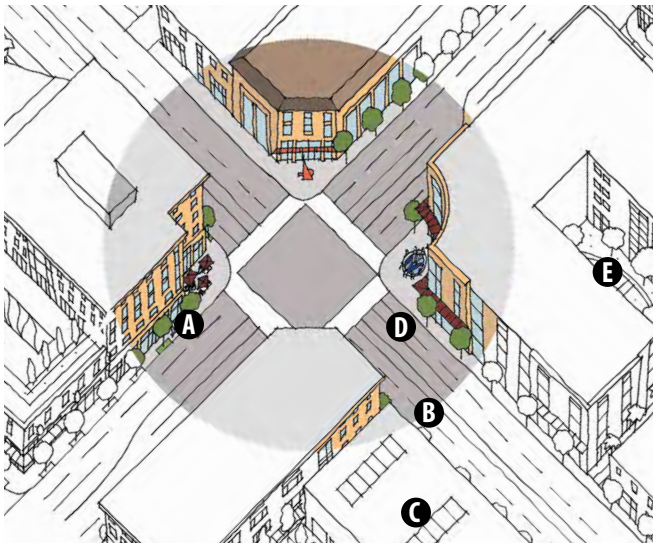
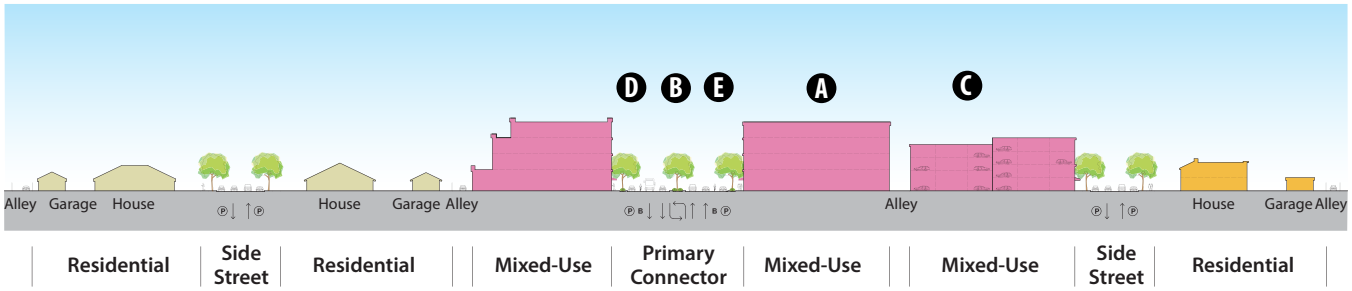


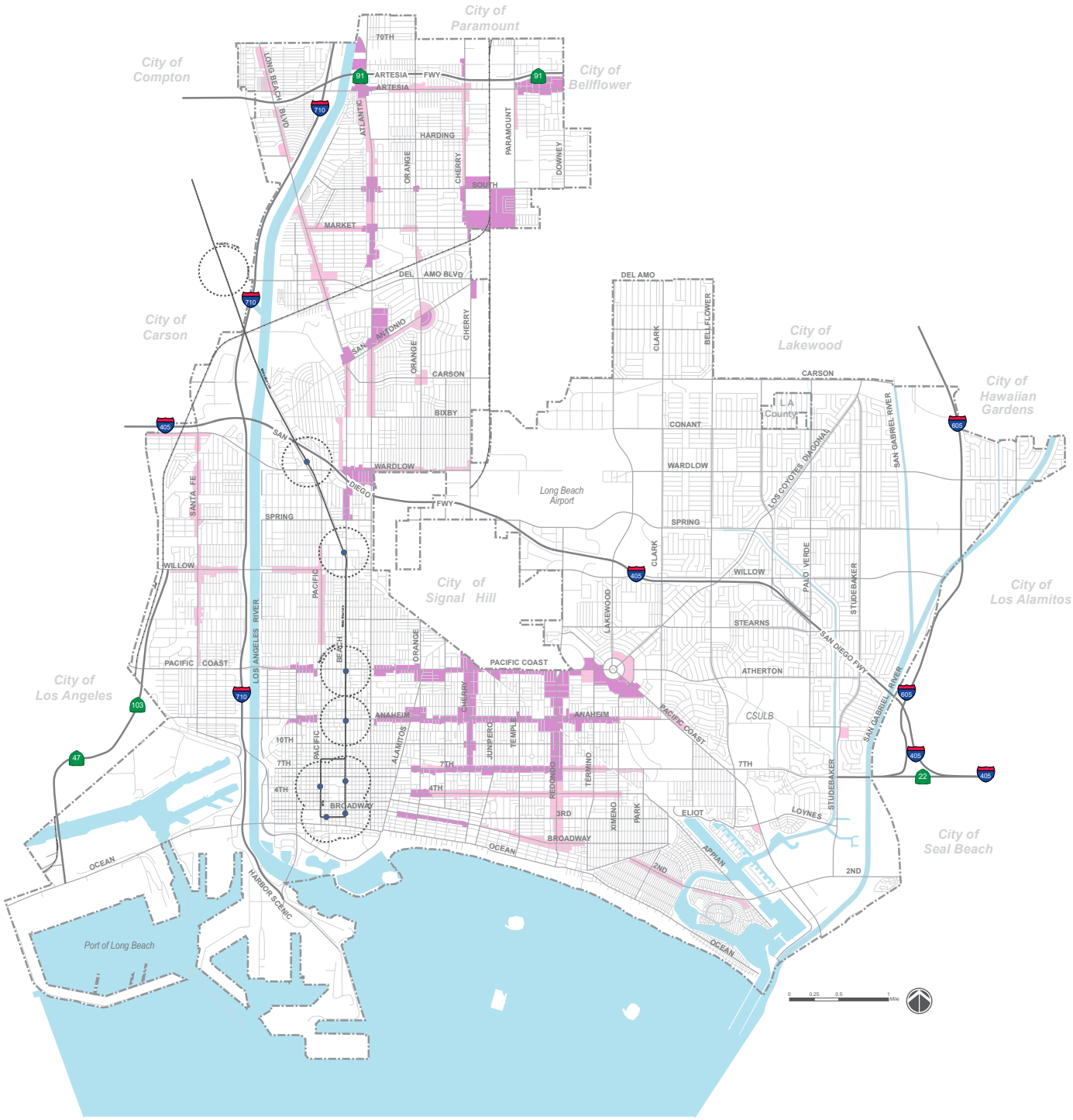
Figure UD-6: Neighborhood-Serving Centers and Corridors Bird's-Eye View

- **A** ***Ensure neighborhood amenities are within walkable proximity (i.e., parks, public facilities, commercial, transit).***
- **B** ***Preserve and enhance streetscape character and connections.***
- **C** ***Provide off-street parking to alleviate on-street parking demands. Provide bicycle parking facilities to encourage bicycle use.***
- **D** ***Encourage streetscape furnishings and amenities.***
- **E** ***Provide courtyards, paseos, and public plazas.***

Figure UD-7: Neighborhood-Serving Centers and Corridors Cross Section



Map UD-5
NEIGHBORHOOD-SERVING CENTERS AND CORRIDORS - LOW AND MODERATE PLACETYPES MAP



Legend

PlaceTypes

Neighborhood Serving Center or Corridor

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

Transit-Oriented Development - Low and Moderate PlaceTypes

Development Patterns. The Transit-Oriented Development-Low PlaceType encourages multi-family housing at densities that provide a transition from lower-density single-family neighborhoods to the higher-density housing planned for the Metro Blue Line station, as well as existing and future bus, shuttle, and other mass transit routes and stations.

The Transit-Oriented Development-Moderate PlaceType is applied directly adjacent to the Blue Line stations, but can be designated to complement future transit systems. The in-street platform stations and landscaped transit parkways have a bold presence on Long Beach Boulevard and through the downtown loop. The Transit-Oriented Development PlaceTypes were created to capitalize on the passenger rail system by encouraging higher-density development within a 1/4 mile of the local rail stations. New housing and public amenities are desirable near each station along the transit corridor.

STRATEGY No. 22: Protect and enhance established Transit-Oriented Development - Low and Moderate PlaceTypes.

- **Policy UD 22-1:** Encourage the massing of buildings and setbacks behind the Long Beach Boulevard light rail corridor to transition from moderate to low, in order to gracefully handle the transition from more intense to less intense development.
- **Policy UD 22-2:** Establish tree-lined sidewalks to provide a shade canopy and human-scale along primary corridors and adjacent to transit centers.
- **Policy UD 22-3:** Provide a mix of uses either within a single development or within a 1/4-mile radius of the PlaceType area, and centered around a transit station. The highest density of development should occur nearest the station.
- **Policy UD 22-4:** Incorporate amenities such as benches, bike racks, banners, way-finding signage and public art within Transit-Oriented Development to foster a pleasant experience and convey the unique identity of each district.
- **Policy UD 22-5:** Provide access to parking/loading from alleys or side streets to minimize curb cuts along the main boulevard where pedestrian activity will be the heaviest.
- **Policy UD 22-6:** Require a well-designed interface between pedestrians, bicyclists, and transit users. Bicycle facilities and pedestrian amenities, including enhanced crosswalks, mid-block crossings, curb extensions, paseos, and public plazas, should be integrated throughout the PlaceType.
- **Policy UD 22-7:** Develop iconic architecture, plazas, and major entrances oriented towards the transit station.
- **Policy UD 22-8:** Bicycle parking racks and lockers should be provided in every parking structure to allow transit users to use bicycles as a cost-effective, healthy, and convenient way to begin or end their transit trip.

Figure UD-8: Transit-Oriented Development Bird's-Eye

A ***Ensure neighborhood amenities are within walkable proximity (i.e., parks, public facilities, commercial, transit).***

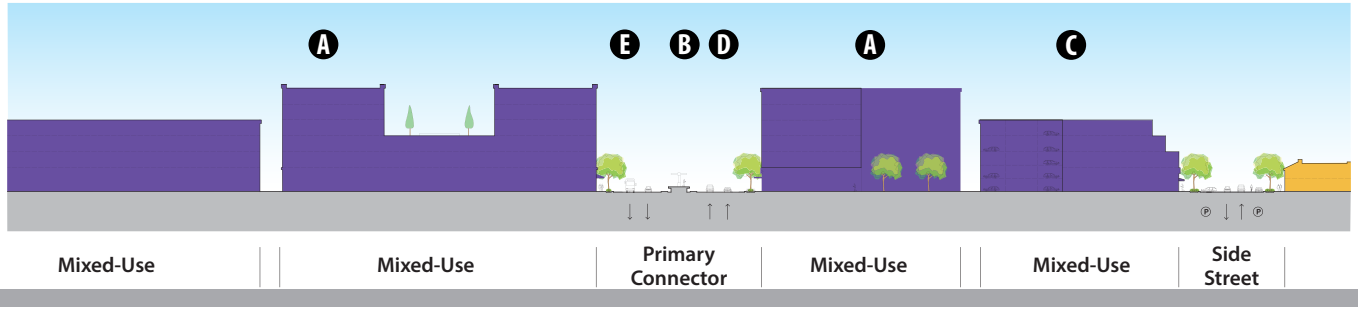
B ***Develop entry to transit station.***

C ***Provide off-street parking to alleviate on-street parking demands. Provide bicycle parking facilities to encourage bicycle use.***

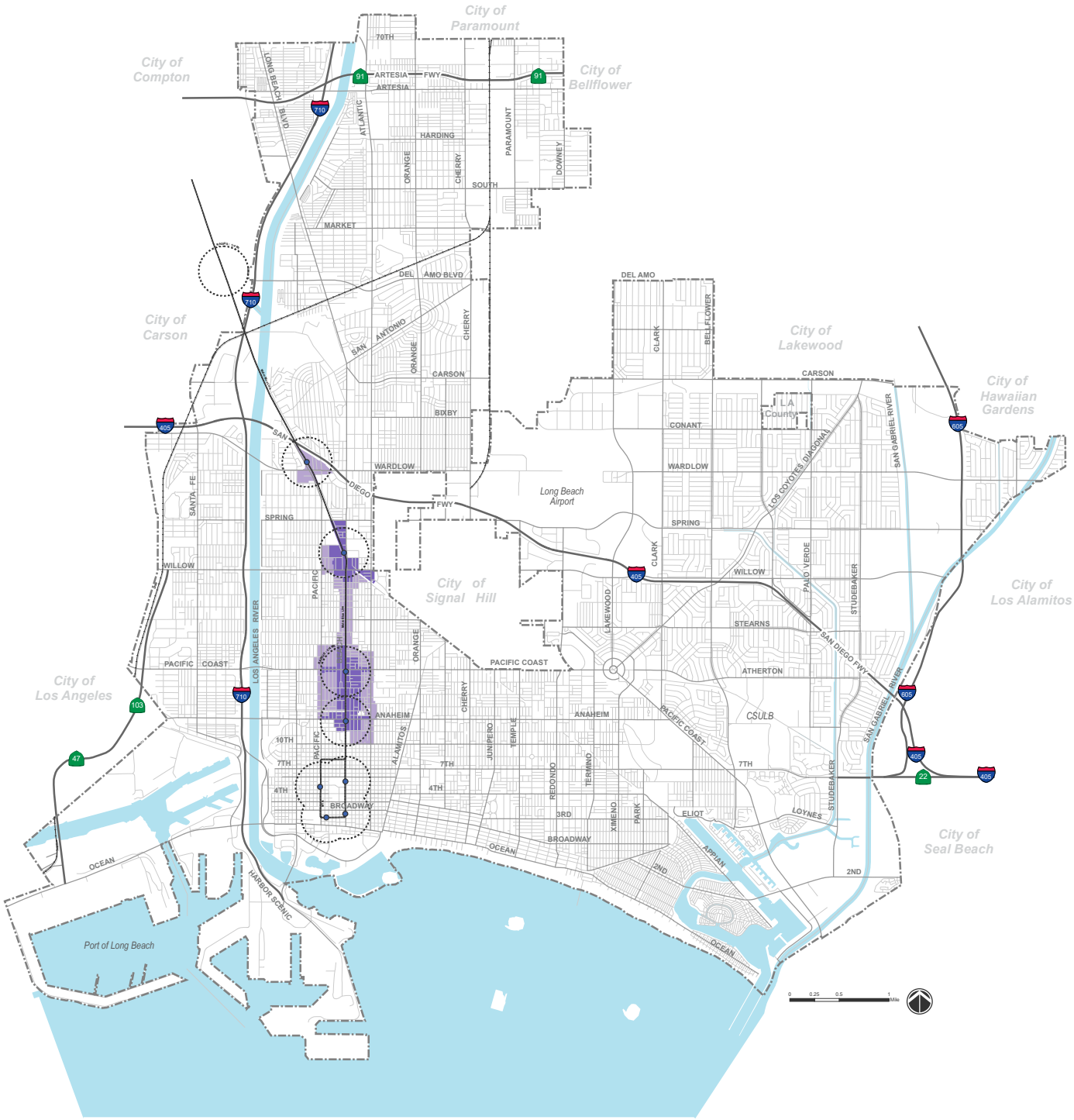
D ***Encourage streetscape furnishings and amenities.***

E ***Provide courtyards, paseos, and public plazas.***

Figure UD-9: Transit-Oriented Development Cross Section



Map UD-6
TRANSIT-ORIENTED DEVELOPMENT - LOW AND MODERATE PLACETYPES MAP



Legend

PlaceTypes

- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

Community Commercial PlaceType

Development Patterns. The Community Commercial PlaceType promotes development that is an automobile-oriented, commercial PlaceType. Future development should respect neighboring developments. Although auto-oriented, this PlaceType encourages a more pedestrian-friendly environment within a development and to adjacent transit stops. While this PlaceType will continue to change and become less common as retailing progresses in the 21st Century, ideally this development pattern will evolve into a PlaceType with a wider variety of land uses.

STRATEGY No. 23: Protect and enhance established Community Commercial PlaceType.

- **Policy UD 23-1:** Provide adequate setbacks, along with visual and noise buffers, to separate automobile-oriented developments from adjacent residential neighborhoods.
- **Policy UD 23-2:** Develop single-family attached units or multifamily residential uses as a transition in scale between the automobile-oriented corridor and the adjacent neighborhood.
- **Policy UD 23-3:** Encourage new developments to provide alley and streetscape improvements that enhance the experience of the pedestrian and transit rider, such as low walls screening parking lots, substantial landscaping, street trees, and pedestrian-scaled lighting.
- **Policy UD 23-4:** Provide clear and controlled signage that is not allowed to proliferate along the corridor or within a center in order to minimize visual clutter.
- **Policy UD 23-5:** Improve sidewalk widths with future setbacks at new development.
- **Policy UD 23-6:** Provide low walls or hedges to buffer pedestrians from surface parking lots and provide well-marked pedestrian paths from sidewalks and parking lots to commercial entrances.
- **Policy UD 23-7:** Capture opportunities to increase permeable surfaces and landscaping to improve the environment in the most heavily auto and truck-oriented areas.
- **Policy UD 23-8:** Provide access to auto-oriented uses with the minimum required curb cut to make the sidewalk more navigable for pedestrians. Consider sidewalk extensions wherever possible to slow automobile traffic into the residential areas and to improve pedestrian crossings at side streets. Provide bicycle parking within commercial developments.

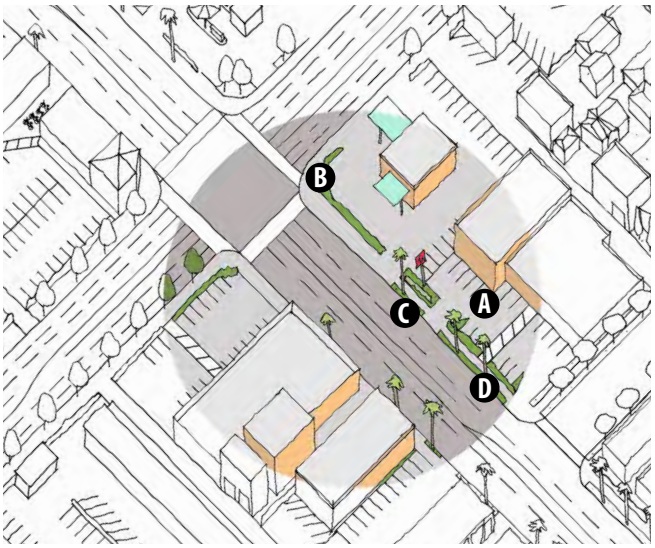
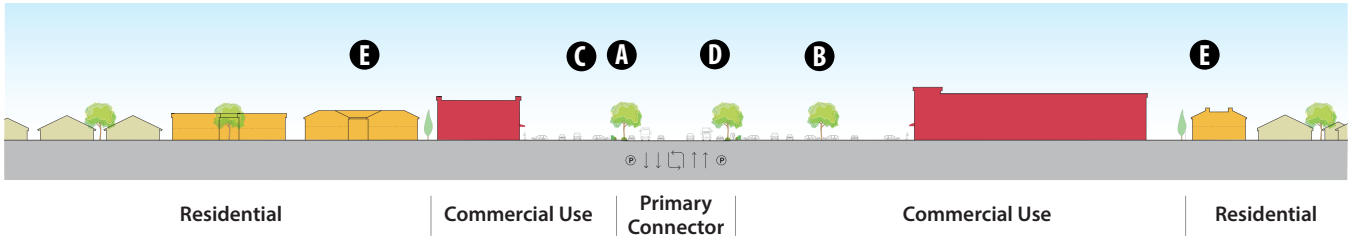


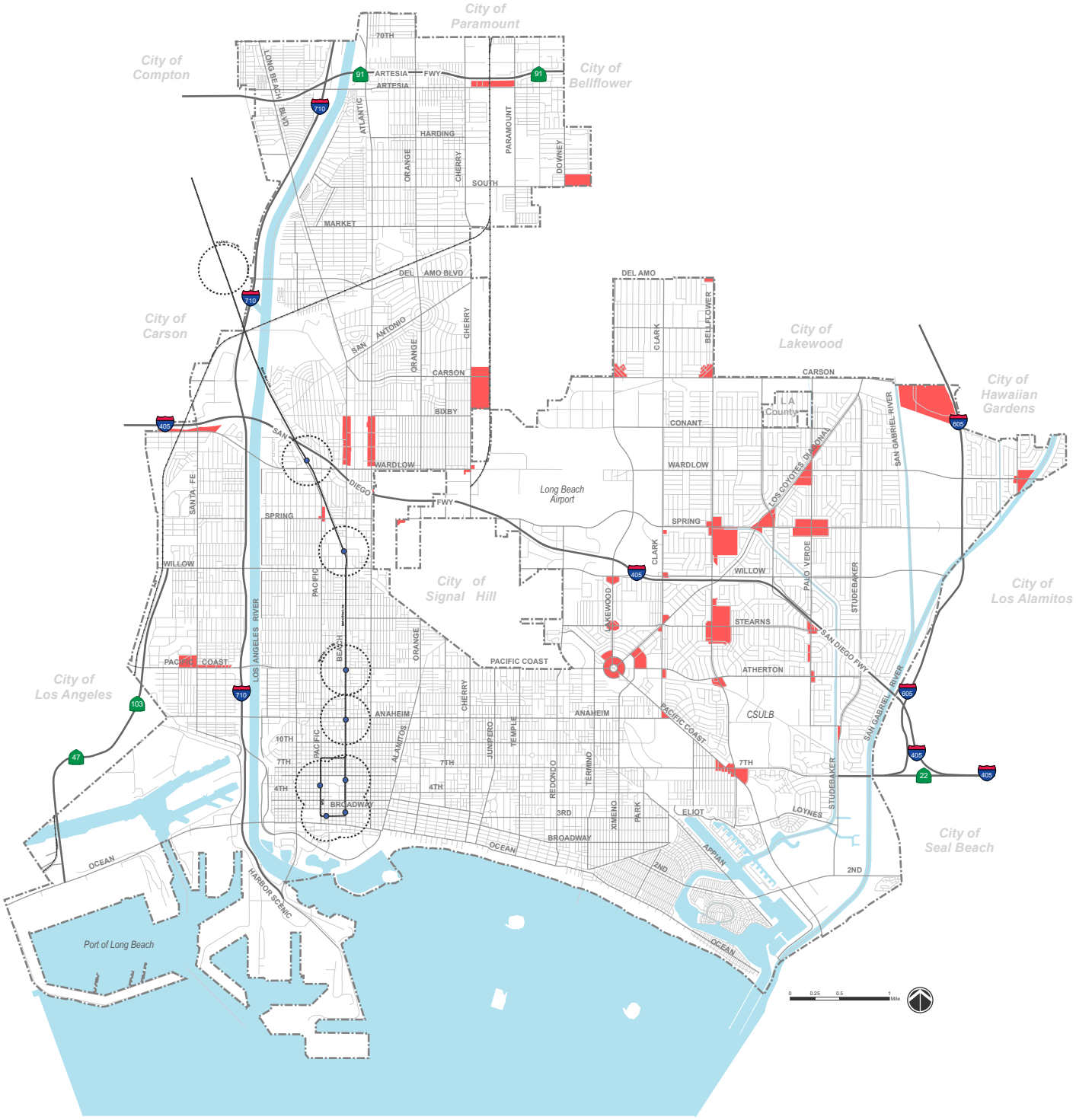
Figure UD-10: Community Commercial Bird's-Eye View

- **A** *Improve sidewalk widths with future setbacks at new development.*
- **B** *Provide landscaping as buffer from surface parking lots.*
- **C** *Minimize curb cuts to increase pedestrian safety.*
- **D** *Encourage streetscape furnishings and amenities.*
- **E** *Transition from commercial to multi-family and single-family residential adjacent to neighborhoods.*

Figure UD-11: Community Commercial Cross Section



Map UD-7
COMMUNITY COMMERCIAL PLACETYPE MAP



Legend

PlaceTypes

CC - Community Commercial

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Industrial PlaceType

Development Patterns. In a preferable future industrial land use scenario, lower-scale buildings occupied by less-intense industrial uses and operations will be used to transition to residential neighbors nearby, and more intense, heavy industrial operations will be internalized within an Industrial PlaceType, farther away from residential uses. The range of permitted industrial intensity increases as more distance is achieved between industrial and residential uses. In addition, all outdoor storage areas must be appropriately screened from public view and appropriate lighting, circulation, parking, landscaping, loading, and security of industrial facilities is required.

STRATEGY No. 24: Protect and enhance established Industrial PlaceType.

- **Policy UD 24-1:** Promote flexible interior spaces, integrated technological resources, innovative architectural styles, and enhanced entrances and frontages to attract creative office and neo-industrial uses.
- **Policy UD 24-2:** Protect and enhance viable industrial uses to retain job employment opportunities and job diversity.
- **Policy UD 24-3:** Promote the incorporation of buffers between residential and industrial uses, such as surface parking, landscaped open space buffers, and lower buildings.
- **Policy UD 24-4:** Utilize sites away from neighborhoods for more intense industrial uses.
- **Policy UD 24-5:** Encourage incompatible land uses and operations to be located away from and screened from view of residential neighborhoods.
- **Policy UD 24-6:** Provide heavily landscaped edges and screening along industrial corridors to make them more attractive to pedestrians, bicyclists, and transit users.
- **Policy UD 24-7:** Establish parkways, planted medians, and street trees along the sidewalk to increase permeable surface areas.
- **Policy UD 24-8:** Convert single-family homes that are immediately next to industrial uses into linear parks to buffer other homes and to serve as open space.
- **Policy UD 24-9:** Buffer industrial areas with open space or compatible uses. Avoid locating residential uses adjacent to industrial uses.

Industrial building.

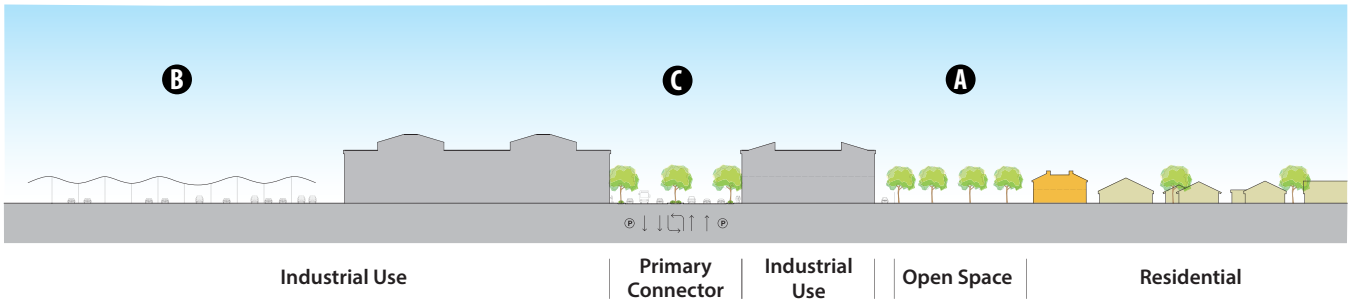
Figure UD-12: Industrial Bird's-Eye View

A ***Incorporate buffers between industrial and residential uses.***

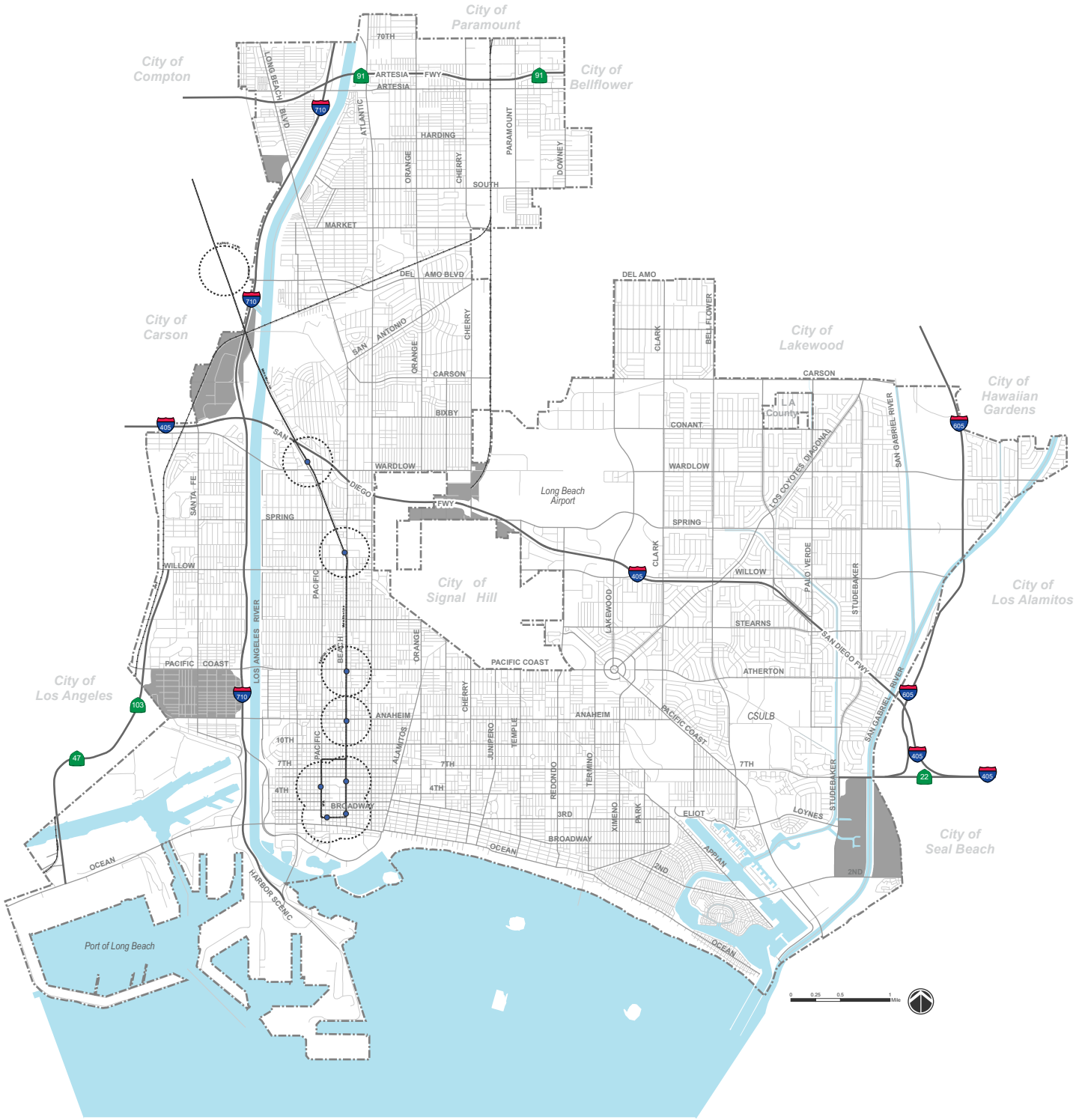
B ***Utilize sites away from residential for more intense industrial uses.***

C ***Enhance and encourage streetscape furnishings and amenities, street trees, medians, and parkways.***

Figure UD-13: Industrial Cross Section



Map UD-7
INDUSTRIAL PLACETYPE MAP



Legend

PlaceTypes

I - Industrial

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Neo-Industrial PlaceType

Development Patterns. This PlaceType promotes job-generating, low-intensity uses adjacent to low-density residential uses, and medium-intensity uses that transition to industrial uses. Preserving the stock of older industrial buildings is key to maintaining the character of the Neo-Industrial PlaceType to allow for future business innovation opportunities and adaptive reuse possibilities to occur. For existing industrial buildings, the existing scale of development, building sizes, heights, and access routes should be maintained, and existing development patterns must be respected.

STRATEGY No. 25: Protect and enhance established Neo-Industrial PlaceType.

- **Policy UD 25-1:** Develop the Neo-Industrial PlaceType as a buffer between existing industrial and residential neighborhoods.
- **Policy UD 25-2:** Establish visual screens, whenever possible, between live-work units and existing heavy or unenclosed industrial operations.
- **Policy UD 25-3:** Encourage buildings that step down to match permitted residential building heights where new development is adjacent to residential uses.
- **Policy UD 25-4:** Encourage development intensity that is graduated, from lower intensity near residential neighbors, to moderate intensity near wholly industrial uses.
- **Policy UD 25-5:** Encourage Neo-Industrial PlaceTypes to have improved walkability with on-site, sidewalk and streetscape landscaping, signage, and other enhancements.
- **Policy UD 25-6:** As a critical component of this PlaceType, establish alleys and pathways between streets and blocks that will be maintained and enhanced.
- **Policy UD 25-7:** Convert and reuse existing buildings for creative commercial or office use, as well as spaces for artists to live, work, and display their work on-site.
- **Policy UD 25-8:** Integrate sustainable design strategies into all development or redevelopment, including new exterior materials or design features.

Innovative start-up businesses and creative design offices.

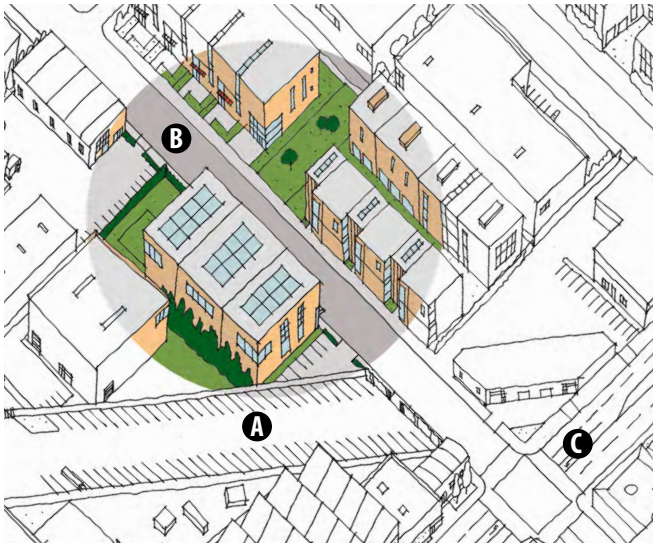


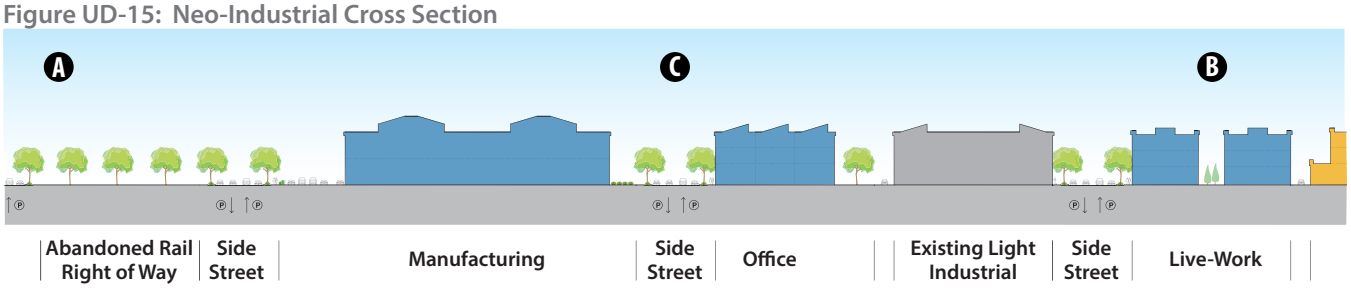
Figure UD-14: Neo-Industrial Bird's-Eye View

A ***Incorporate buffers between industrial and residential uses.***

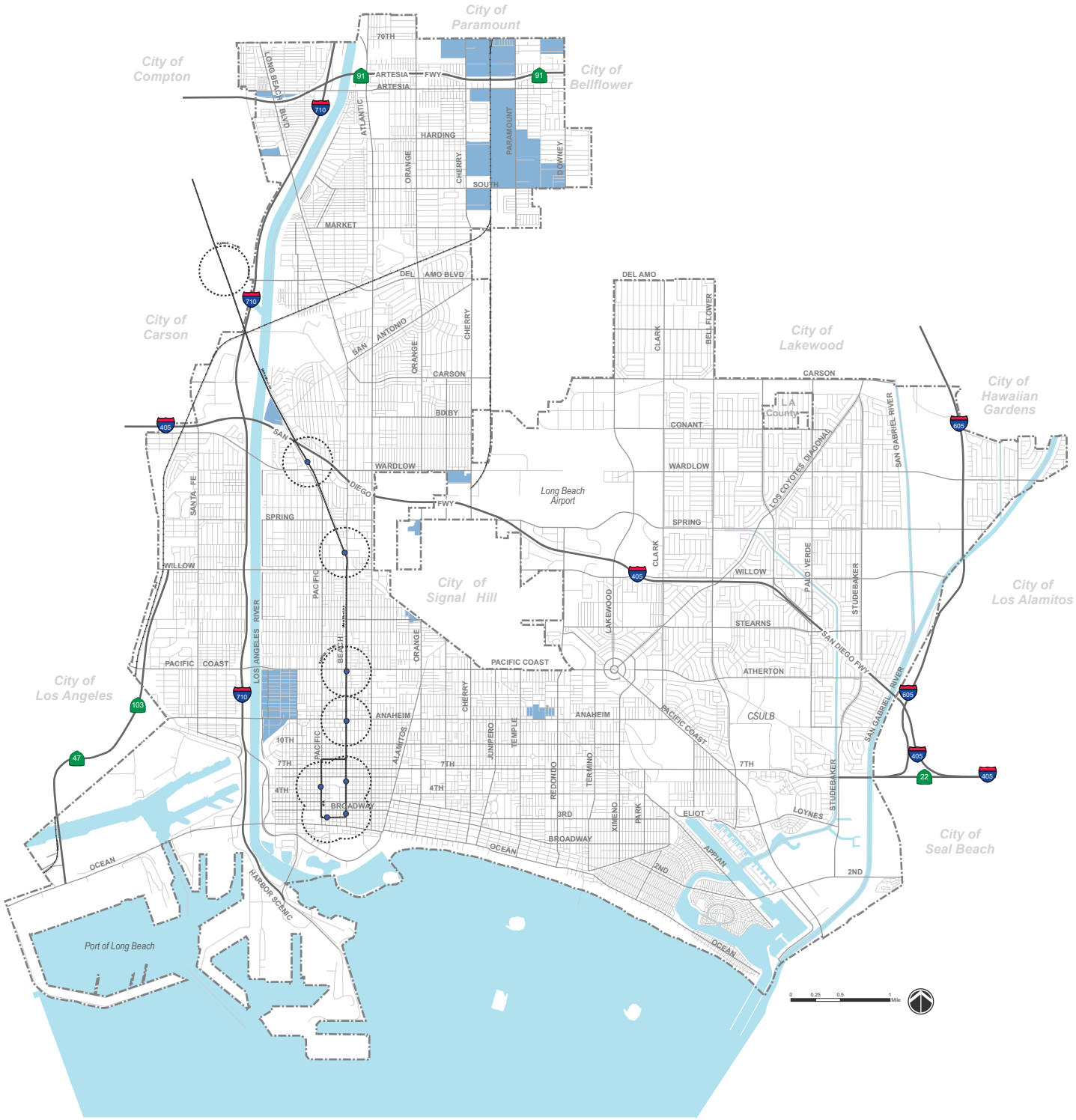
B ***Provide better connections by improving bikeways and pedestrian pass-throughs along shared use alleys.***

C ***Enhance and encourage streetscape furnishings and amenities, street trees, medians, and parkways.***

Figure UD-15: Neo-Industrial Cross Section



Map UD-8
NEO-INDUSTRIAL PLACETYPE MAP



Legend

PlaceTypes

NI - Neo-Industrial

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Regional-Serving Facility PlaceType

Development Patterns. Land use planning for large regional facilities must address compatibility with the surrounding environment. This PlaceType promotes keeping facility uses and development intensities that may produce significant off-site nuisances internal to the regional facility. Prioritizing programs that address ancillary operational impacts to the community, and prioritizing sustainability initiatives in the updates of facility master plans is encouraged as a fundamental means of organizing facility operations. As most of the regional serving facilities in Long Beach are long established, they have adopted master plans for future development or they are governed by Planned Development Ordinances.

Miller Children's Hospital Long Beach.

STRATEGY No. 26: Protect and enhance established Regional-Serving Facility PlaceType.

- **Policy UD 26-1:** Enhance the edges, both within and adjacent to, the regional serving facility to avoid abrupt transitions between large institutional facilities and their neighbors.
- **Policy UD 26-2:** Encourage separation of incompatible land uses with site planning strategies and appropriate design treatments.
- **Policy UD 26-3:** Incorporate shade trees and pedestrian amenities along main streets, with pedestrian entrances oriented toward the sidewalk, not just internalized to the campus or facility.
- **Policy UD 26-4:** Incorporate design features that provide for thematic elements to link adjacent areas with regional serving facilities, reinforcing community connections to these places.
- **Policy UD 26-5:** Provide access to parking/loading from side streets, wherever possible, to minimize curb cuts along the main street.
- **Policy UD 26-6:** Provide courtyards, paseos, and plazas that integrate open space within buildings and parking structures and encourage walking within the campus and to nearby amenities.

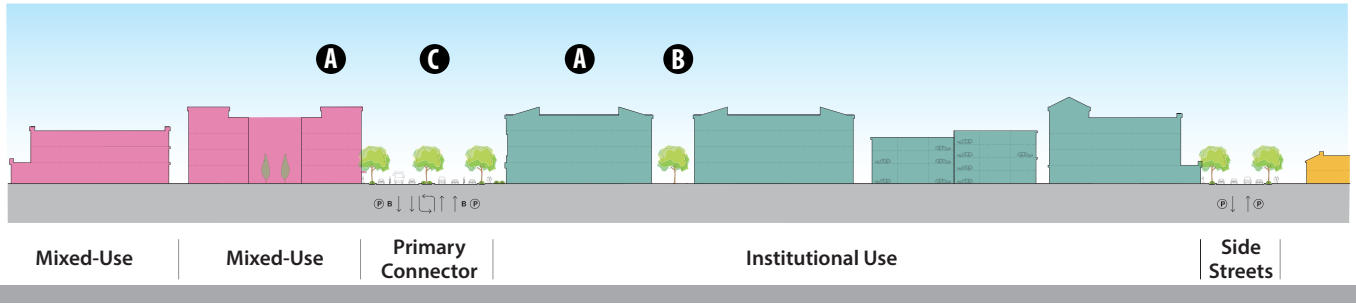
Figure UD-16: Regional-Serving Facility Bird's-Eye View

A ***Create campus identity through streetscape enhancement and architectural treatment.***

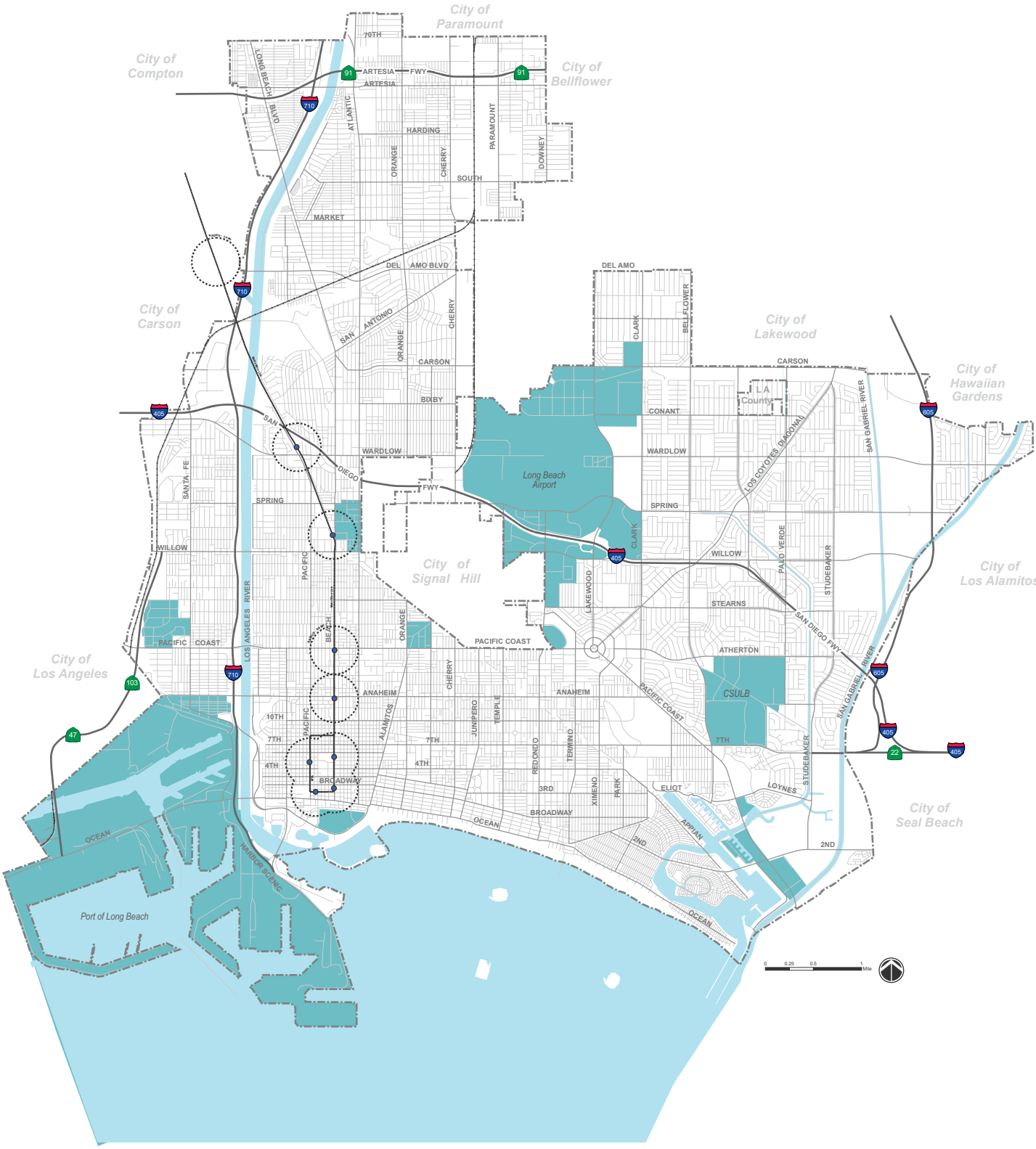
B ***Provide better connections by improving bikeways and pedestrian pass-throughs along shared use alleys.***

C ***Enhance and encourage streetscape furnishings and amenities, street trees, medians, and parkways.***

Figure UD-17: Regional-Serving Facility Cross Section



Map UD-9
REGIONAL-SERVING FACILITY PLACETYPE MAP



Legend

PlaceTypes

RSF - Regional Serving Facility

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Downtown PlaceType

The Downtown Plan provides recommendations and implementation tools that govern development within this area.

Development Patterns. The Downtown PlaceType is primarily comprised of small blocks and streets that provide a walkable framework for pedestrians. The street network also allows easy access by automobile. The Downtown Transit Gallery on 1st Street provides transfers between buses and the Metro Blue Line light rail train to Los Angeles. In addition, there is the Downtown Bicycle Station, which allows commuters to jump on a train and bring their bicycle along or leave it in bike station storage until they return. Buildings in the Downtown PlaceType range from smaller-scale residential units in the outer areas (West End and East Village) to medium and high-rise office and residential towers in the central core and along Ocean Boulevard.

The Downtown PlaceType promotes a highly urbanized downtown core featuring compact development comprised of a mix of compatible uses, building types, and styles. Density must be balanced with open space and new developments must preserve light, air circulation, views, and privacy.

STRATEGY No. 27: Protect and enhance established Downtown PlaceType.

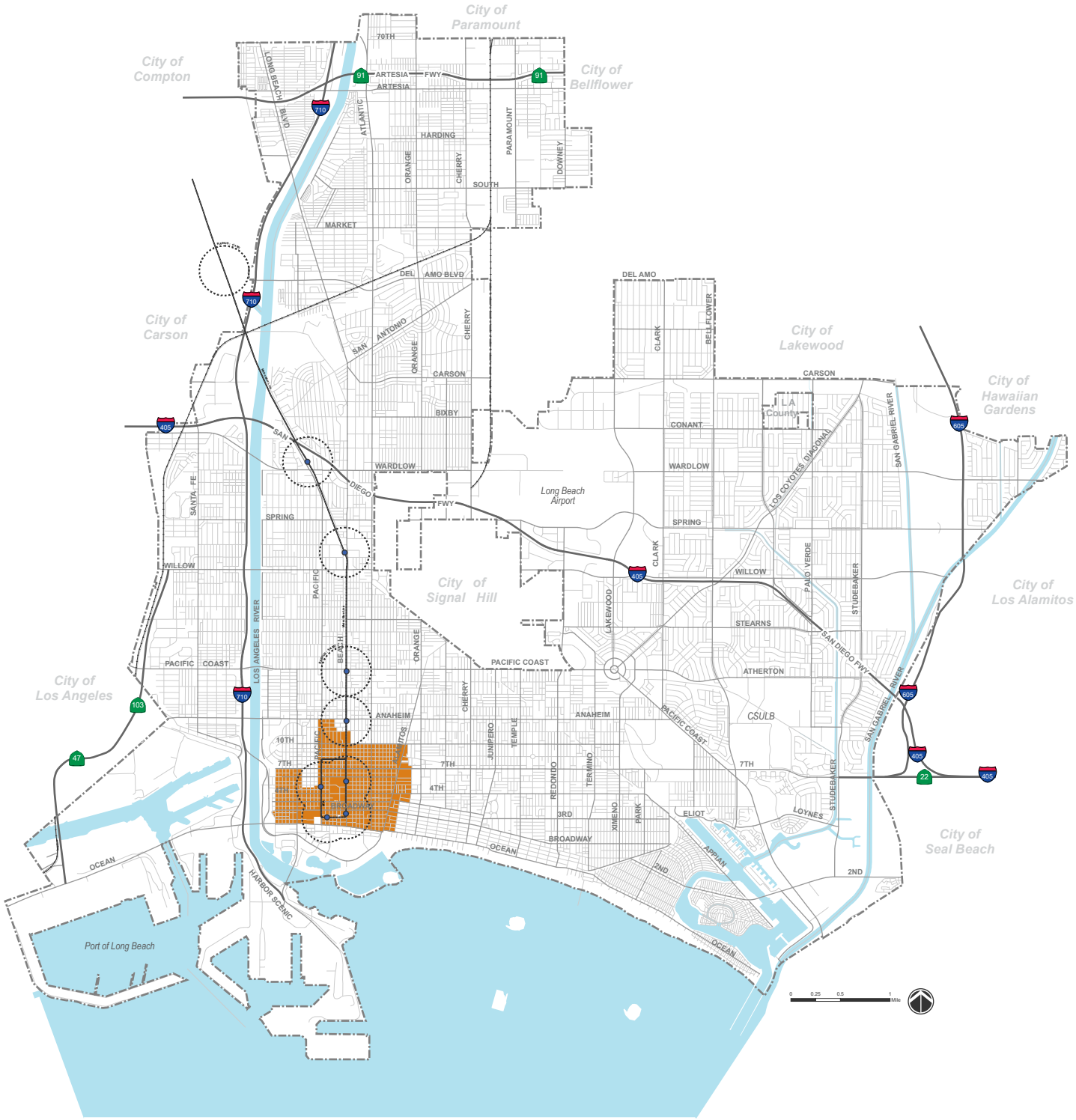
- **Policy UD 27-1:** Promote the importance of the transitions between uses and developments in the Downtown PlaceType, given the small block sizes and mix of different uses.
- **Policy UD 27-2:** Apply the development standards and guidelines prescribed in the Downtown Plan.
- **Policy UD 27-3:** Establish sustainable streetscape design as a norm for this PlaceType.
- **Policy UD 27-4:** Enhance streetscapes and building elements to promote significant pedestrian activity by providing well-articulated building facades with quality building materials and workmanship, and featuring high-quality street furnishings and design.
- **Policy UD 27-5:** Establish a bustling urban environment that will allow pedestrians to feel comfortable and welcome.

Urban residential apartments.

Pedestrian-friendly streetscape with enhanced paving.

1st Street Transit Gallery.

Map UD-10
DOWNTOWN PLACETYPE MAP



Legend

PlaceTypes

DT - Downtown

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Waterfront PlaceType

Development Patterns. Each of the waterfront areas within this PlaceType experienced much of their initial development during very different periods in time. For example, the Downtown Shoreline is comprised of more contemporary tourist, retail, restaurant, and entertainment -style buildings, streets, and block patterns. The Belmont Pier and Pool Complex contains a mix of older multi-family residences, a grocery store, a motel, and shops, in addition to the recreational activities offered at the pier and pool. In this area, there are also newer beachfront condominiums and restaurants served by a public beach/pier parking lot, adjacent to the very popular bike and pedestrian path on the beach (developed at the time as auto-oriented places). This area has great potential for being very pedestrian-friendly, as people tend to park once and walk around the area.

The Southeast Area Development and Improvement Plan (SEASP) Waterfront PlaceType is adjacent to Orange County and stretches along Pacific Coast Highway and the Long Beach Marina (along the mouth of the San Gabriel River). While predominately auto-oriented, this area is intended to be more accessible to pedestrians, cyclists, boaters, and new forms of non-auto mobility. Appropriate infill development, wetland restoration, and better transit links should be a priority.

The waterfront is an important asset to the City. Development should take advantage of its opportunities, providing design solutions that better connect the City to the ocean.

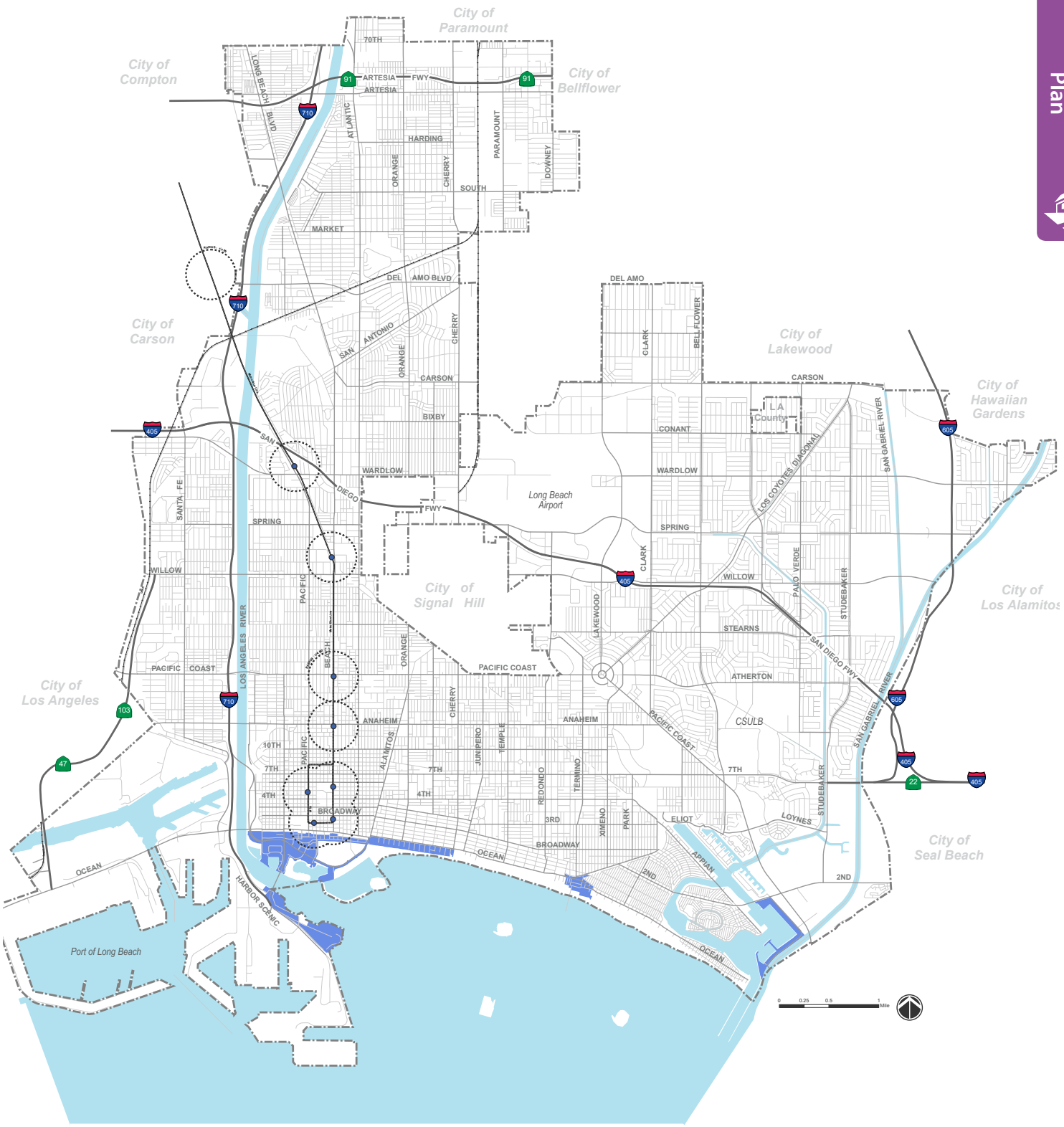
STRATEGY No. 28: Protect and enhance established Waterfront PlaceType.

- **Policy UD 28-1:** Improve public access to the marinas and waterfront.
- **Policy UD 28-2:** Encourage mixed-uses and greater building intensity to be located nearest the center within this PlaceType, with housing and/or lower-scale buildings on the periphery.
- **Policy UD 28-3:** Encourage de-emphasizing of vehicular access and promote park-once solutions.
- **Policy UD 28-4:** Develop attractive gateway elements to invite visitors in to explore the unique offerings found in each of the Waterfront PlaceTypes.

Downtown Shoreline with view of the Queen Mary.

- **Policy UD 28-5:** Promote and preserve street design characteristics unique to each Waterfront PlaceType.
- **Policy UD 28-6:** Encourage pedestrian activity through the controlling of vehicles, the use of tree-canopied, landscaped pathways and sidewalks, pedestrian-scaled lighting, and active and inviting ground floor uses.
- **Policy UD 28-7:** Provide transit stops that are conveniently located.
- **Policy UD 28-8:** Establish signage that is clear and controlled.
- **Policy UD 28-9:** Provide pedestrian entrances that are oriented to the sidewalk, not just internalized to the development.
- **Policy UD 28-10:** Encourage pedestrian-scaled building details featuring well-articulated building facades with quality building materials and workmanship.
- **Policy UD 28-11:** Provide tourists with the pleasant experience they seek by providing high-quality street furnishings and good streetscape design.
- **Policy UD 28-12:** Encourage oil well consolidation in the SEASP area to encourage wetlands restoration.

Map UD-11
WATERFRONT PLACETYPE MAP



Legend

PlaceTypes

WF - Waterfront

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Public Spaces

This section describes how public spaces, including both places where people gather and places that form the iconography of the City, interact with streets and the private realm and how they can be created or designed to positively impact the experience of the City.

Natural Areas, Watersheds, and Views

STRATEGY No. 29: Restore and protect Long Beach's natural features, which include: the Pacific Ocean, beaches, bluffs, San Gabriel and Los Angeles Rivers, ranchos and adjacent land, Dominguez Gap, the Los Cerritos Wetlands, and waters in Alamitos Bay.

- **Policy UD 29-1:** Provide leadership and work with the community to restore and rehabilitate habitats and lands along the San Gabriel River and Los Angeles River, the Los Cerritos Wetlands, Colorado Lagoon, and the Alamitos Bay.
- **Policy UD 29-2:** Support and expand the City's urban forest and provide additional planting, tree cover, and upgrade dated facilities at natural features per the Urban Forest Plan contained in the Conservation Element.
- **Policy UD 29-3:** Integrate learning components at natural feature sites to connect people with the natural environment and support a collective pride in stewardship of local natural areas.

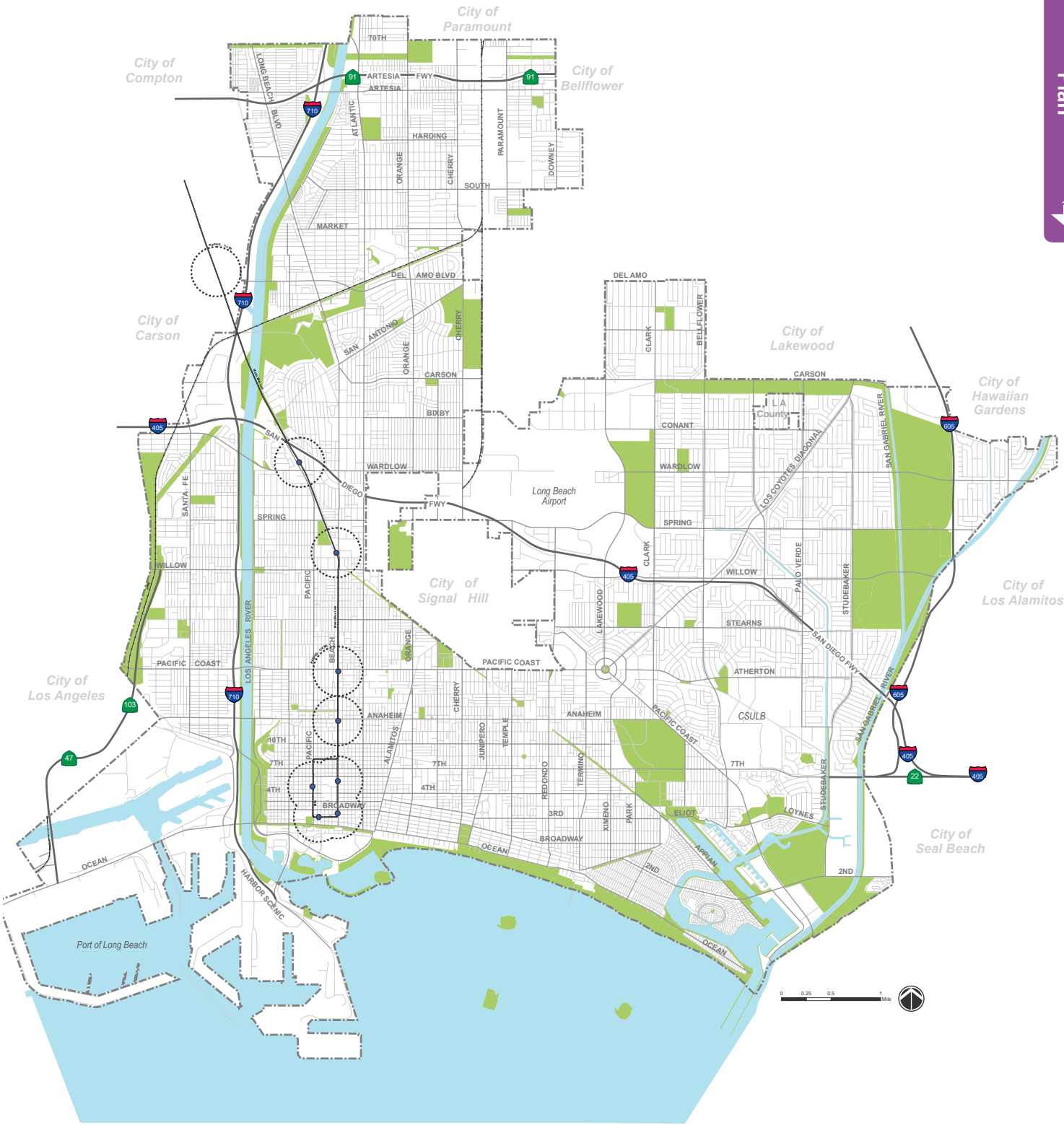
Open Spaces and Parks

STRATEGY No. 30: Provide greater access to the open space network to promote pedestrian and bicycle activity, to support the health and well-being of residents, and to increase opportunities for recreation.

- **Policy UD 30-1:** Preserve and enhance access to existing open space through improvements to existing facilities and wayfinding programs for new and existing open spaces.
- **Policy UD 30-2:** Seek opportunities to provide new publicly accessible open spaces and linkages to the greater open space network within residential projects.
- **Policy UD 30-3:** Look for opportunities on underutilized streets to be repurposed, where unused roadway can become open space (i.e., an enlarged parkway, greening unpaved alleys, linear or pocket park).
- **Policy UD 30-4:** Encourage projects to integrate required open space with a beneficial relationship to the public realm (e.g., connecting a paseo to the sidewalk, providing a layered landscape design and private patios along the sidewalk, connecting an internal courtyard visually or physically to the sidewalk).

El Dorado Park Nature Center.

Map UD-12
OPEN SPACE AND PARKS MAP



Legend

PlaceTypes

OS - Open Space

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

Plazas, Squares, and Other Publicly Accessible Private Spaces

STRATEGY No. 31: Provide a variety of public spaces throughout the City.

- **Policy UD 31-1:** Enhance the open space network around neighborhood centers by providing paseos, entry forecourts, courtyards, plazas, larger parkways, and landscaped setbacks.
- **Policy UD 31-2:** Create a network of public spaces and plazas that link pedestrian priority areas identified in the Mobility Element.
- **Policy UD 31-3:** Encourage plazas and public spaces in locations that take advantage of views and viewsheds.
- **Policy UD 31-4:** Promote the integration of adequate seating, bike racks, water features, public art, and other pedestrian amenities within plazas and public spaces.
- **Policy UD 31-5:** Enhance City centers to provide opportunities for people to congregate and interact, such as Atlantic Avenue in Bixby Knolls, the intersection of Broadway at Redondo, or Viking and Nordic Way at Carson Street.
- **Policy UD 31-6:** Encourage new public spaces in concert with community facilities to provide opportunities for large group gatherings.
- **Policy UD 31-7:** Ensure landscaping for new projects complies with Title 23, Chapter 2.7 of the California Code of Regulations, Model for Water Efficient Landscape Ordinance
- **Policy UD 31-8:** Incorporate water conservation methods, such as regular adjustment of irrigation controllers, irrigation scheduling based on plant water needs, preventing overspray, water-efficient landscape designs using low water-use plants, efficient irrigation systems, minimize turf areas, soil improvement and mulch, watering during early or late hours, and water budgeting using Water Use Classification of Landscape Species (WUCOLS) to reduce the amount of water used in a landscape.

Enhance city centers with public spaces.

Plaza provides entry and connection to nearby uses.

Drought tolerant landscaping.

Community Facilities

STRATEGY No. 32: Enhance community use areas.

- **Policy UD 32-1:** Ensure adequate public facilities and services to support the community.
- **Policy UD 32-2:** Encourage development of additional community facilities (such as meeting spaces) available for low-cost use to ensure equitable access.
- **Policy UD 32-3:** Explore opportunities to create street fair use in key areas, such as Pine Avenue at 4th Street at City Place, Pacific Avenue in Wrigley, and East Village at 1st Street.

Infill Public Space (Plazas, Community Gardens, Parks)

STRATEGY No. 33: Create parks and plazas at infill sites.

- **Policy UD 33-1:** Utilize city-owned, vacant lots for interim green uses (e.g., parks, gardens, plant nurseries, mulch areas) and develop strategies that address citywide and local needs, in determining the best use for these lots.
- **Policy UD 33-2:** Identify opportunities within neighborhoods and at schools to create and maintain community gardens.
- **Policy UD 33-3:** Transform underused lots and public properties into vibrant, social, public spaces to accommodate community gatherings and events.

Provide public space on infill sites that provide connections between uses and incorporate water efficient landscaping.

Rotary Centennial Park.

Interstitial and Temporary Spaces

STRATEGY No. 34: Utilize existing infrastructure for temporary uses that promote activity and entertainment.

- **Policy UD 34-1:** Expand the pedestrian zone on the sidewalk with parklets, where feasible. Parklets should incorporate landscaping, seating, and bicycle parking.
- **Policy UD 34-2:** Provide flexibility in street design and pedestrian improvements in order to be flexible and easily accommodating of temporary uses that might be programmed to serve the neighborhood, such as farmers' markets or community events.
- **Policy UD 34-3:** Enhance areas used for special events with specialty paving and pedestrian improvements.
- **Policy UD 34-4:** Provide opportunities to use public parking lots and facilities for community events (e.g., Pacific Avenue in Wrigley, East Village at 1st Street, Pine Avenue at 4th Street at City Place).
- **Policy UD 34-5**: Encourage and continue to support events such as "ciclovía," parades, and street festivals to raise awareness about other uses of streets, and to encourage walking and bicycling, promoting healthy lifestyles and community engagement.
- **Policy UD 34-6**: Support programming of flexible use/temporary spaces in the public right-of way. Streamline the permitting process to encourage businesses and agencies to create active spaces.
- **Policy UD 34-7**: Prioritize locations to incorporate infrastructure into spaces designated for flexible uses/temporary spaces. Enhance the physical setting, including pop-up bollards in the streets, providing electrical outlets in tree wells, stage locations, A/V hook-ups, and other infrastructure needs.
- **Policy UD 34-8**: Encourage diverse uses in parklets or street decks, including restaurant seating as commercial extensions, "barklets" (i.e., mini dog parks), art installations, mini community gardens, bike corrals, and fitness zones.

Parklet incorporates dining in parking stalls along the street.

Dining areas of restaurants can be extended through the use of parklets.

Bike parking is extended out into street parking stall.

Edges, Thoroughfares, and Corridors

This section describes the relationship of the street to its surroundings. Careful attention to design and character along the street edge with respect to Street Types, Frontages, and Street Walls, can positively impact the human experience of the City and its economic and cultural vitality.

Interface Between Buildings and Streets

STRATEGY No. 35: Building design and form shall define street walls that contribute to great streets and vibrant pedestrian environments.

- **Policy UD 35-1:** Foster an "eyes on the street," active pedestrian environment by maximizing transparency of exterior walls, incorporating and/or encouraging active ground floor uses, and entrances that engage the street.
- **Policy UD 35-2:** Buildings should be constructed of high quality and durable materials, especially at the ground floor, which is experienced most by pedestrians.
- **Policy UD 35-3:** Promote the incorporation of retail uses and/or a dining zone along the street frontage within neighborhood centers.
- **Policy UD 35-4:** Emphasize pedestrian orientation in site and building design to define the public realm and activate sidewalks and pedestrian paths.
- **Policy UD 35-5:** Reinforce the importance of a building frontage located adjacent to a public sidewalk, consistent with PlaceType and Frontages (Page 68-75) criteria.
- **Policy UD 35-6:** Maintain a minimum street wall height to ensure the "public room of the street" (as shaped by buildings on both sides) is consistent. This is intended to eliminate parcels being underdeveloped along the edges, thus not contributing to the creation of good streets.
- **Policy UD 35-7:** Monolithic structures that appear as a massive wall, block views, or overshadow the surrounding neighborhood, should be avoided.
- **Policy UD 35-8:** Where parking structures are planned, the street wall should be composed of active uses that screen podium parking, parking structures, and other uses that do not contribute to a vibrant pedestrian environment.

The street wall encompasses the dynamic relationship amongst the building, building façade, sidewalk zone, and the street.

Streets as the "Public Room"

Sidewalks are a significant link in the pedestrian circulation network. Sidewalks provide pedestrian access to virtually every activity and provide critical connections between other modes of travel, including the automobile, public transit, and bicycles. Sidewalks can enrich the streetscape and provide a variety of outdoor public spaces. Consider the streetscape as a "public room" when improving the frontage zone of the buildings and view corridors along the street. The Frontage Zone is typically located within the public right-of-way between the curb or roadway edge and the property line. The Frontage Zone contains three distinct zones: Planting and Amenity Zone, Walk Zone, and Dining and Display Zone.

Example of a "public room" space along 1st Street.

The Planting and Amenity Zone

The Planting and Amenity Zone buffers pedestrians from the adjacent roadway. The curb defines the streetscape by separating vehicles with pedestrians to prevent vehicular movement onto the sidewalk area. Some of the following furnishings in the Planting and Amenity Zone may include: bus shelters, trees, planters, and landscaping, trash and recycling receptacles, bicycle racks, street lights, clocks, public art, banners and flags, information kiosks, wayfinding/signage, benches, consolidated news racks, signal poles, utility poles, street lights, controller boxes, hydrants, parking meters, and driveway aprons, grates, and sidewalk dining. All fixtures and street furniture should be contained within the Planting and Amenity Zone to keep the Walking Zone free for walking.

Walk Zone

The walk zone is intended for pedestrian travel. This zone should be entirely free of permanent and temporary objects. The typical walk zone widths should be a minimum of 5 feet.

Figure UD-18: Streets as the "Public Room" using 1st Street and Linden Avenue as an example.

Dining and Display Zone

The Dining and Display is the area between the Walk Zone and the building. The Dining and Display zone may exist on private property if vertical elements such as buildings, fences, hedges etc. are appropriately setback from the Walk Zone. This zone allows pedestrians a comfortable "shy away" distance from the building fronts, in areas where buildings are at the lot line, or from elements such as fences and hedges on private property. Where no Planting and Amenities Zone exists, elements that would normally be sited in that zone, such as transit shelters and benches, telephone kiosks, signal and street lighting poles and controller boxes, traffic and parking signs, and utility poles, may occupy the Dining and Display Zone. In some cases, easements or additional right-of-way may be required to allow for these items. Private temporary uses such as sidewalk cafes and sidewalk dining may occupy the Dining and Display Zone, so long as the Walk Zone is maintained.

STRATEGY No. 36: Develop a specific role and identity for a street, so that it contributes to the neighborhood's character while supporting specific, functional requirements.

- **Policy UD 36-1:** Improve the frontage zone of buildings as extensions of the building, by enhancing entryways and doors, incorporating sidewalk cafes, and enhancing the space adjacent to the building as part of the pedestrian experience.
- **Policy UD 36-2:** Develop streetscape strategies and concepts that establish a street as a public room, and incorporate opportunities for dining and display, walking, landscaping, and street furniture.
- **Policy UD 36-3:** Develop guidelines for sidewalk dining and parklets that enhance the overall character of the streetscape and provide restaurants and businesses a streamlined permitting process to encourage sidewalk dining and parklets where appropriate.
- **Policy UD 36-4:** Identify zones along both sides of the street that define the building edge, dining and display areas, walking zone, planting and street furniture zones, and parking zones to enhance the character of the "public room."

Frontages

The intent of streetscape and frontage improvements is to create a pleasant and inviting environment for residents, businesses, and visitors. Streetscapes can provide a consistent and cohesive theme to unify and highlight the distinctive characteristics of each neighborhood. The graphics on these pages provide examples of how building frontages relate to a safe, attractive, and pedestrian-friendly streetscapes. The following graphics illustrate desired characteristics and recommendations associated with typical Frontages.

STRATEGY No. 37: Frontages shall have well-designed street walls, contributing to making an inviting transition between public and private space.

- **Policy UD 37-1:** Unify streets within each district with consistent frontage character types.
- **Policy UD 37-2:** Provide outdoor dining areas at restaurants with enclosed patios, decorative fencing, planters, and potted plants.
- **Policy UD 37-3:** Identify areas for frontage improvements along pedestrian priority areas, described in the Mobility Element on Page 80, Map 13.

Example of sidewalk dining and parklet in San Francisco.

Figure UD-19: Porches

» **Policy UD 37-4:** Promote façade improvement strategies and implementation measures for existing commercial, office, and residential buildings, and incorporate the following improvements:

- Entrances that include recessed doors, archways or cased openings, a change in wall plane, and/or projecting elements above the entrance.
- Accessible pathways from parking or the street to building entries.
- Low-level lighting on pathways and building faces.
- Clear glass windows on the ground floor for interior shop views, awnings, or other window coverings that contribute to defining the character of the building.
- 360 degree architectural articulation.

RECOMMENDATIONS FOR PORCHES

A ***Single-family homes generally have façades that are set back from the property line.***

B ***A defined porch provides a physical transition from public to private space.***

C ***Front yards may include low fences or courtyard walls, raised or at-grade porches, and size and style variations of the porch, as well as unique landscape treatments.***

D ***Porches should be deep and livable extensions of the home, with space to provide benches and potted plants.***

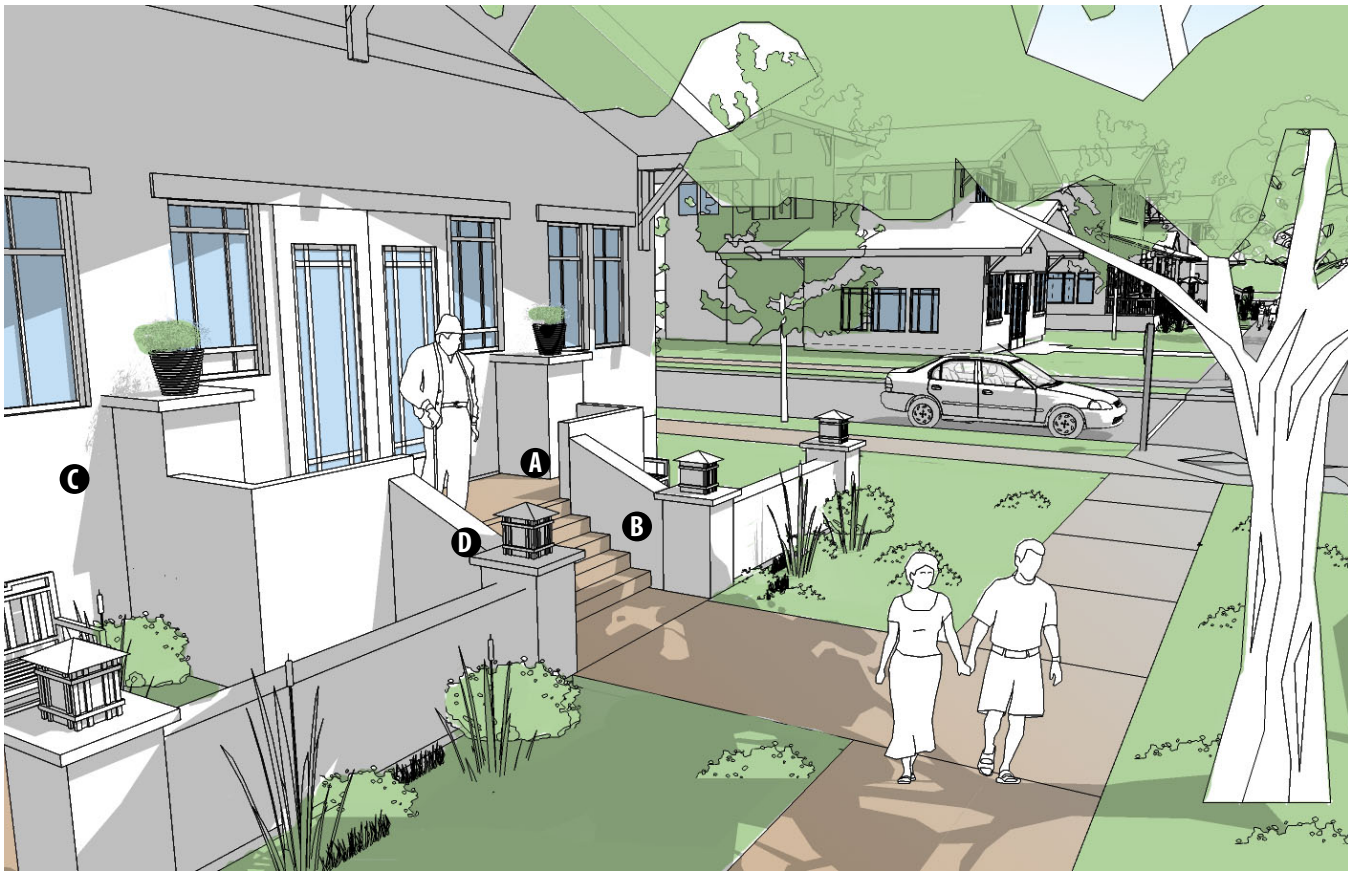


Figure UD-20: Stoops

Stoop at entry to a single-family home.

RECOMMENDATIONS FOR STOOPS

- **A** ***Stoops are elevated entry porches where stairs are usually placed much closer to the property line than a porch.***
- **B** ***Stoops have an elevation change from the sidewalk to the ground floor that helps create transition and privacy.***
- **C** ***Stoops may be seen on single-family or attached housing product, and may or may not be covered by a roof.***
- **D** ***Stoops generally do not have livable extensions from the home, as porches do, and are rather platforms at a building's entrance.***

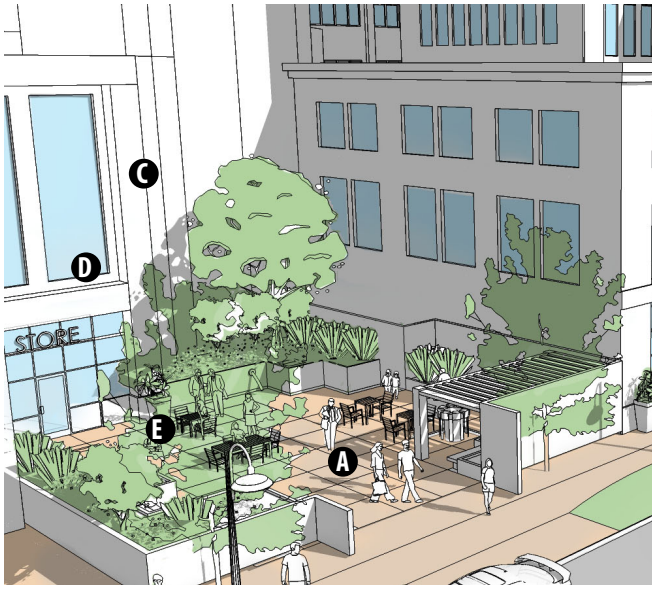
Figure UD-21: Terraces

Restaurant utilizes a terrace for dining space.

RECOMMENDATIONS FOR TERRACES

- **A** ***Usually elevated, a terrace separates and sets back the façade from the sidewalk and the street.***
- **B** ***This type buffers residential use from urban sidewalks and removes the private yard from public encroachment.***
- **C** ***Terraces are suitable for conversion, making them popular for outdoor cafes, restaurants, or even office environments.***
- **D** ***Terraces can be enclosed with short walls or fences to separate and define the space.***

Figure UD-22: Forecourt



RECOMMENDATIONS FOR FORECOURTS

A *A forecourt is an open area in front of a structure's entrance.*

B *Often residential forecourts are accessed by more than one unit of a multi-family complex.*

C *When used in commercial or civic design, forecourts are formed by a recess in the façade of a building, which may be used to define entry, provide for outdoor dining, or allow vehicular drop-off.*

D *The forecourt may be used in combination with another frontage to provide interest and articulation.*

E *The forecourt should provide pedestrian amenities, such as seating, landscaping, lighting, fountains, and dining opportunities.*

Figure UD-23: Storefront

Transparent glass, signage, awning, and plants create an inviting storefront.

RECOMMENDATIONS FOR STOREFRONTS

A ***Storefronts are façades, usually placed at or close to the property line, with entries at the same level as the sidewalk.***

B ***Storefronts are large, glazed openings in a façade, filled with doors and transparent glass in a storefront assembly.***

C ***This traditional retail frontage type is often provided with canopies or awnings to shelter pedestrians and shade the storefront glass from glare.***

D ***The storefront assembly may be recessed to provide a widened sidewalk or a covered area for outdoor dining.***

E ***Ground floor ceiling heights are typically higher than the ceiling heights of floors above to support commercial activity and promote pedestrian-oriented space along the street.***

Figure UD-24: Galleries

This gallery provides protection from the sun, while providing a pleasant shopping experience.

RECOMMENDATIONS FOR GALLERIES

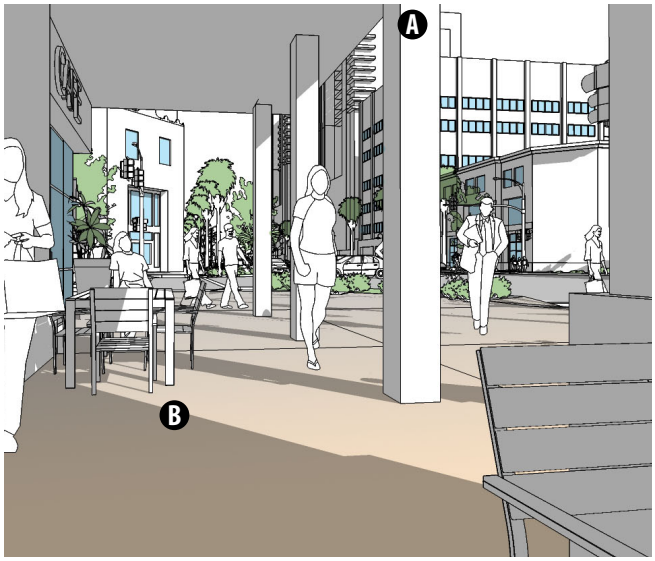
A ***Galleries are façades with an attached colonnade, which project beyond the building façade and can extend to the property line.***

B ***Galleries can be used for outdoor dining to provide shelter or act as a continuous awning.***

C ***The space above a gallery is unenclosed and may be used as a trellis or a deck.***

D ***Ground floor ceiling heights are typically higher than the ceiling heights of floors above to support commercial activity and promote pedestrian-oriented space along the street.***

Figure UD-25: Arcades



RECOMMENDATIONS FOR ARCADES

A *Ideally located at the back of sidewalk, the space under an arcade becomes an extension of the public realm.*

B *Like a gallery, the arcade provides shelter for the pedestrian and shade for storefront glass or outdoor dining.*

C *The advantage of the arcade is that the space above can be used for habitable residential use or office use.*

D *Ground floor ceiling heights are typically higher than the ceiling heights of floors above to support commercial activity and promote pedestrian-oriented space along the street.*

Street Type

The following Street Types are a context-sensitive street classification system, developed to define six Street Types within the City of Long Beach: Regional Corridor, Boulevard, Major Avenue, Minor Avenue, Neighborhood Connector, and Local Street. Refer to the Mobility Element for specific criteria and designations. The following urban design strategies help transform the public right-of-way into an exciting, pedestrian-friendly environment, providing public spaces for people, as well as improving traffic and transportation modes.

The relationship of Street Type to PlaceType is important. The context and relationship of a neighborhood and PlaceType to the right-of way is crucial in the development and character of the public realm. Commercial streets, downtown streets, and residential streets all have different design parameters, speeds, modes of transportation, and needs. The following urban design strategies provide the opportunity to change the urban fabric of the public realm by reusing street space for different purposes, such as cycle tracks, curb extensions, parklets, and traffic calming measures. Refer to Map 16: Opportunity for Street Character Change, Page 89 in the Mobility Element, for streets identified as opportunities for these changes.

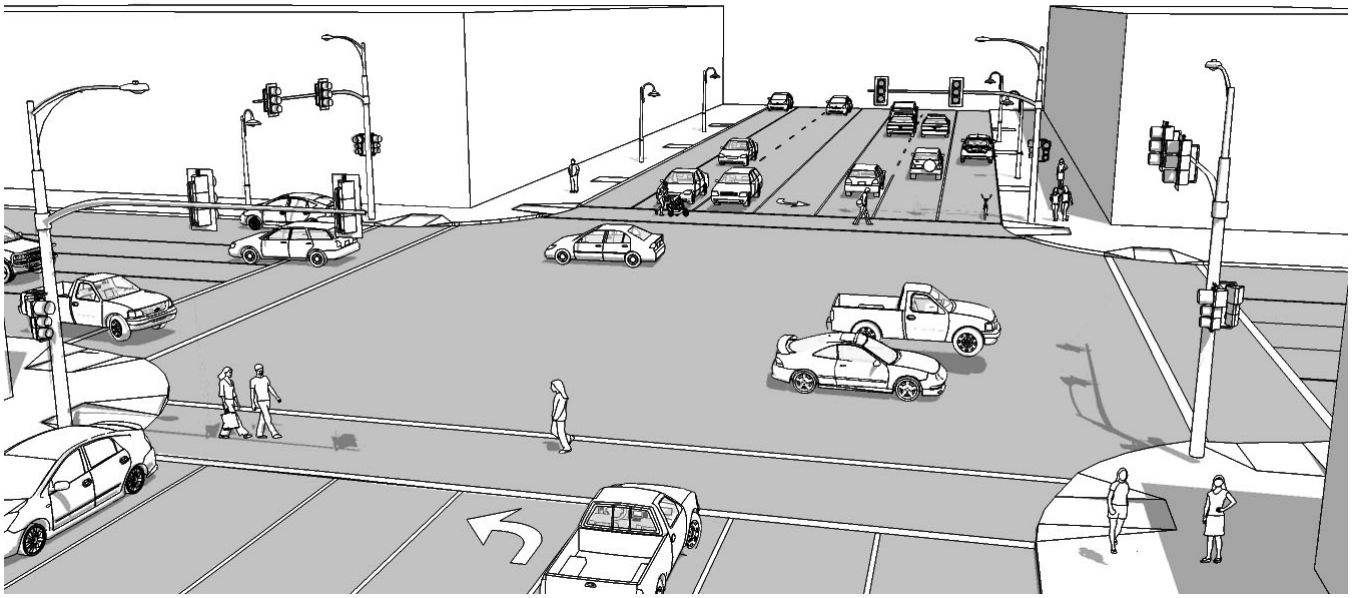
STRATEGY No. 38: Enhance the functionality within each PlaceType by improving the character and functionality of each Street Type.

- **Policy UD 38-1:** Explore opportunities to incorporate bulbouts, cycle tracks, bike corrals, parklets, mid-block crossings, medians, parkways, and landscape planting within the right-of-way.
- **Policy UD 38-2:** Ensure that urban and downtown areas with high volumes of pedestrian travel have enlarged walk zones, street trees, and maximum use of street furnishings and lighting.
- **Policy UD 38-3:** Consider one-way or two-way cycle tracks on roadways with high traffic volumes to separate bicycles from vehicular traffic.
- **Policy UD 38-4:** Buffer and screen parking areas with landscaping, berms, or low screens.
- **Policy UD 38-5:** Provide special paving treatment or striping at crosswalks and intersections.
- **Policy UD 38-6:** Encourage collaboration between the City and businesses to convert curbside parking spaces into public spaces.
- **Policy UD 38-7:** Create a clear frontage zone along the sidewalk with clear visibility of the structure and façade, as well as the space adjacent to the building.
- **Policy UD 38-8:** Provide a clear zone for through-pedestrian traffic along the sidewalk. See the Mobility Element for specific sidewalk widths for each Street Type.
- **Policy UD 38-9:** Provide a street furniture and landscape zone adjacent to the curb for parkways, tree grates, bicycle parking, lighting, benches, newspaper kiosks, utility poles, potted plants, benches, transit shelters, and other pedestrian amenities.
- **Policy UD 38-10:** Incorporate chicanes in residential streets to slow traffic and to activate the public space along a corridor.
- **Policy UD 38-11:** Incorporate pinchpoints where curb extensions may be applied mid-block to calm traffic.

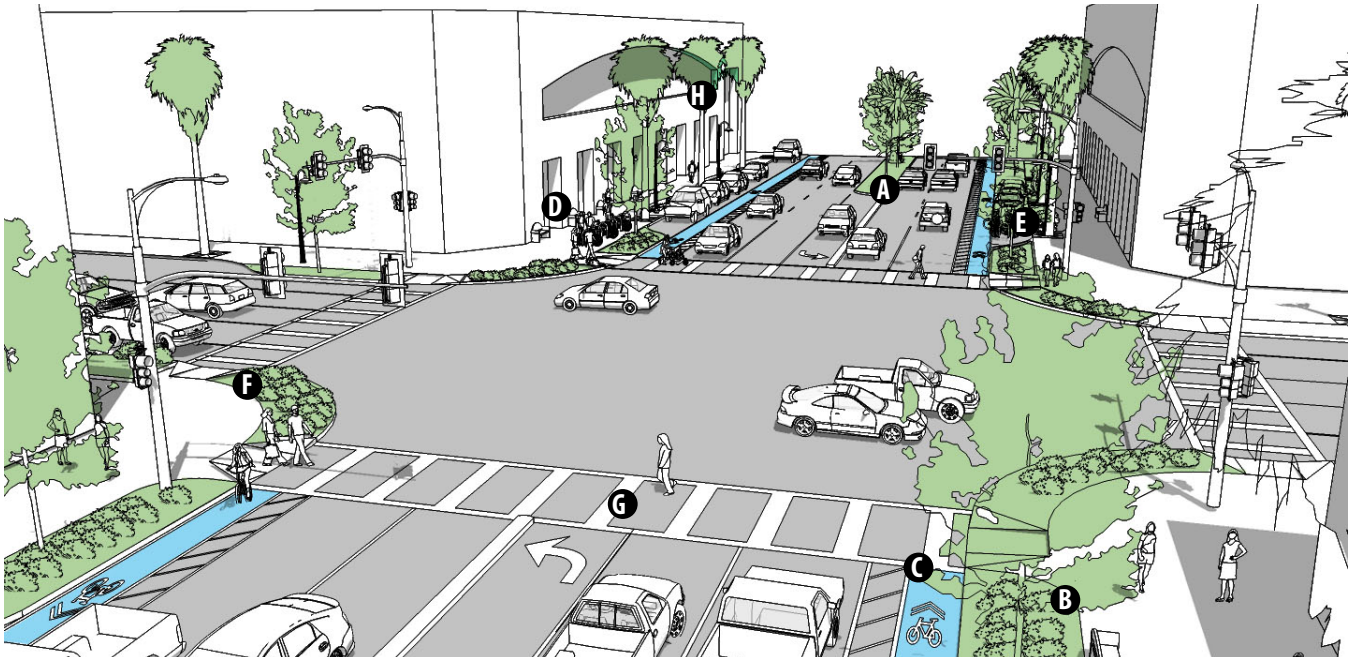
Bike parking is extended out into street parking stall.

Residential street with mini roundabout.

Figure UD-26: Regional, Boulevard, and Major Avenue Street Types



BEFORE: Streets are designed around an auto-oriented environment, transporting people, goods, and services from one community or neighborhood to another.

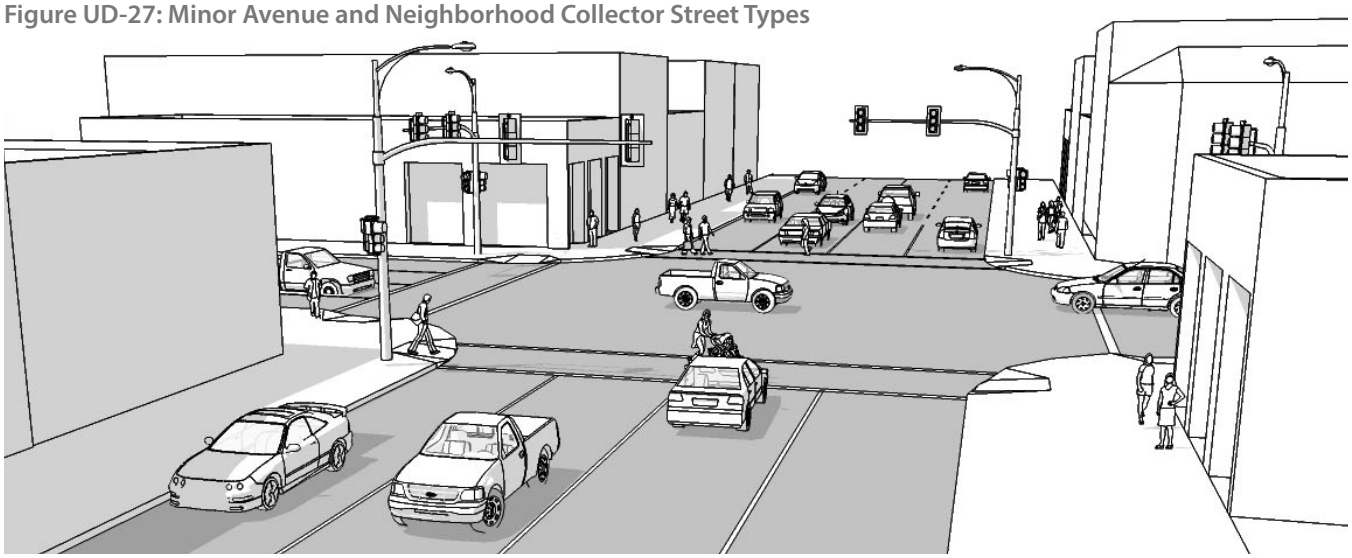


AFTER: Transform streets to include a variety of public spaces, creating a walkable environment.

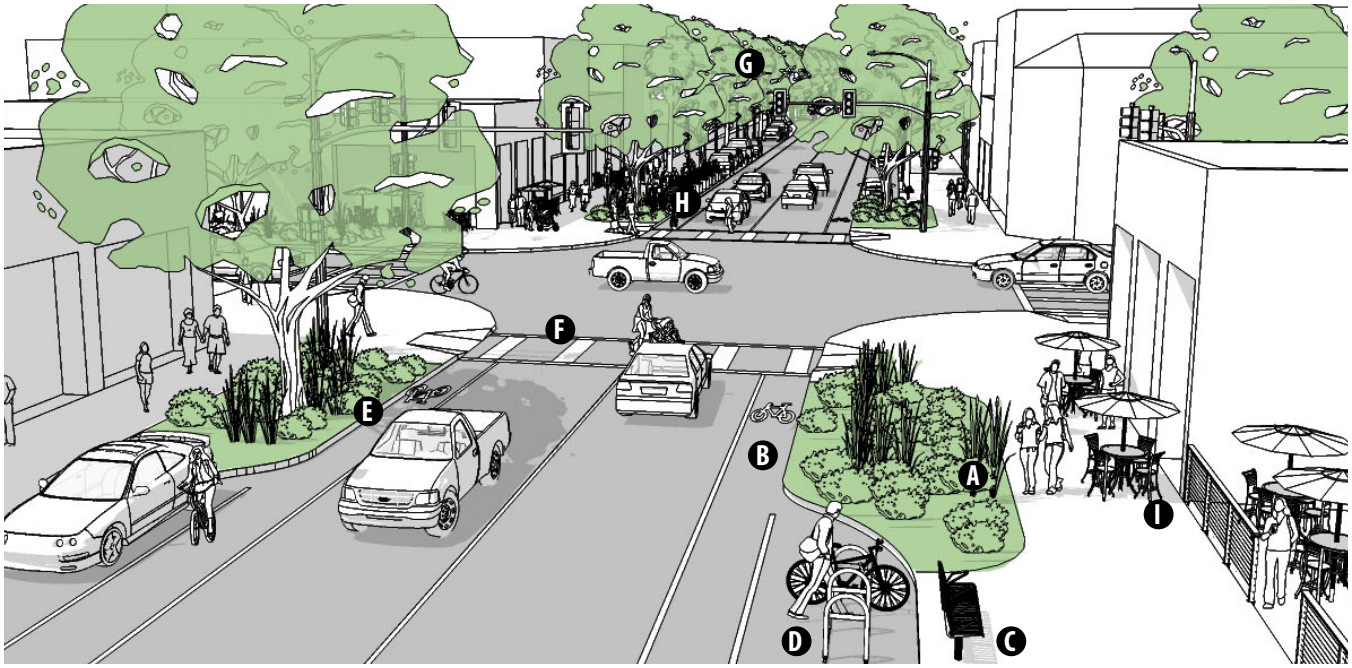
RECOMMENDATIONS

- **A** ***Planted median slows traffic, while allowing room for stacking at heavily used intersections.***
- **B** ***Sidewalk widening increases usable space for pedestrians, bicycle parking, and planted bulbouts.***
- **C** ***A one-way cycle track, raised cycle track, or parking-buffered cycle track on each side of the street provides a safe route for bicyclists.***
- **D** ***Enhanced furnishings, landscaping, and building façade add vitality to corridors and create identifiable streetscapes.***
- **E** ***Bike corrals or bike share stations can replace one parking space and can be installed near corners.***
- **F** ***Flow-through planters in bulbouts treat stormwater run-off in high density urban areas and prevent puddling at crosswalks.***
- **G** ***Paint crosswalks for high-visibility crosswalk treatment. Incorporate pedestrian refuge at center median, where needed.***
- **H** ***Enhance the street corridor with consistent street tree planting. Plant trees in tree grates or in planters. Avoid sparse tree wells.***

Figure UD-27: Minor Avenue and Neighborhood Collector Street Types



BEFORE: Streets are designed to transport people, goods, and services to neighborhoods and serves as routes between neighborhoods.

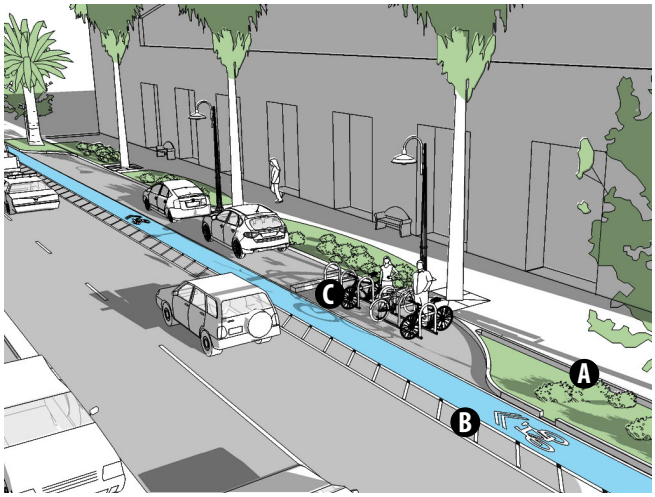


AFTER: Transform streets to include a variety of public spaces, creating a walkable and bicycle-friendly environment.

RECOMMENDATIONS

- **A** ***Sidewalk widening increases usable space for pedestrians, bicycle parking, and planted bulbouts.***
- **B** ***Bicycle lanes provide designated lanes for bicyclists to travel safely between neighborhoods.***
- **C** ***Enhanced furnishings, landscaping, and building façades add vitality to corridors and create identifiable streetscapes.***
- **D** ***Bike corrals or bike share stations can replace one parking space and can be installed near corners.***
- **E** ***Flow-through planters in bulbouts treat stormwater run-off in high density urban areas and prevent puddling at crosswalks.***
- **F** ***Paint crosswalks for high-visibility crosswalk treatment. Incorporate pedestrian refuge at center median, where needed.***
- **G** ***Enhance the street corridor with consistent street tree planting. Plant trees in tree grates or in planters. Avoid sparse tree wells.***
- **H** ***Provide parklets in locations with active storefronts and heavy foot traffic.***
- **I** ***Utilize the frontage zone of sidewalks for cafe dining opportunities.***

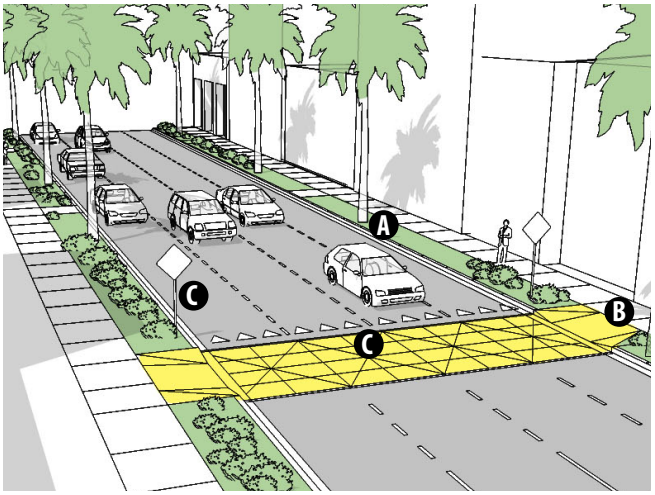
Figure UD-28: Bicycle Corral with Cycle Track



RECOMMENDATIONS

- **A** *Sidewalk widening increases usable space for pedestrians, bicycle parking, and planted bulbouts.*
- **B** *A one-way cycle track, raised cycle track, or parking-buffered cycle track on each side of the street provides a safe route for bicyclists.*
- **C** *Bike corrals or bike share stations can replace one parking space and can be installed near corners.*

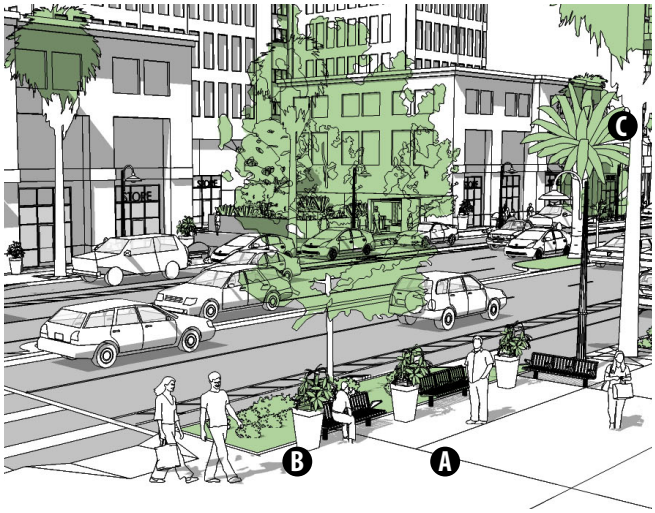
Figure UD-29: Mid-Block Crossing



RECOMMENDATIONS

- **A** *Enhance the street corridor with consistent street tree planting. Plant trees in tree grates or in planters. Avoid sparse tree wells.*
- **B** *Provide mid-block pedestrian crossings along long corridors.*
- **C** *Identify crosswalks with special paving and markings, daylighting, signage, and signalized markers.*

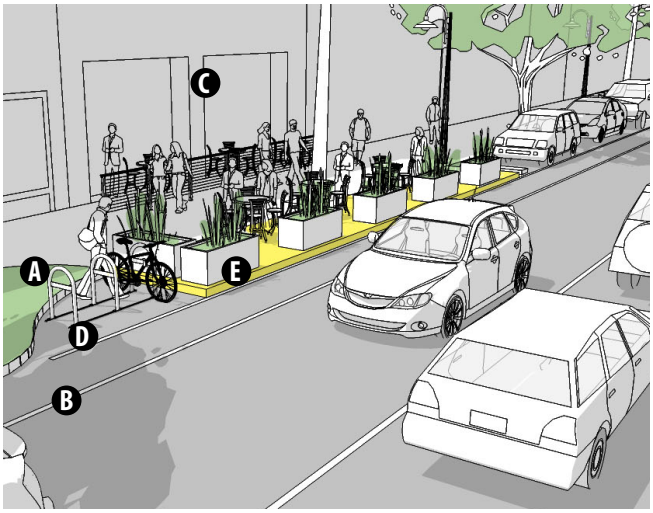
Figure UD-30: Bulbout



RECOMMENDATIONS

- **A** *Sidewalk widening increases usable space for pedestrians, bicycle parking, and planted bulbouts.*
- **B** *Provide seating, landscaping, and other pedestrian amenities near corners.*
- **C** *Incorporate a variety of street trees in bulbouts, tree grates, and medians to enhance the urban forest.*

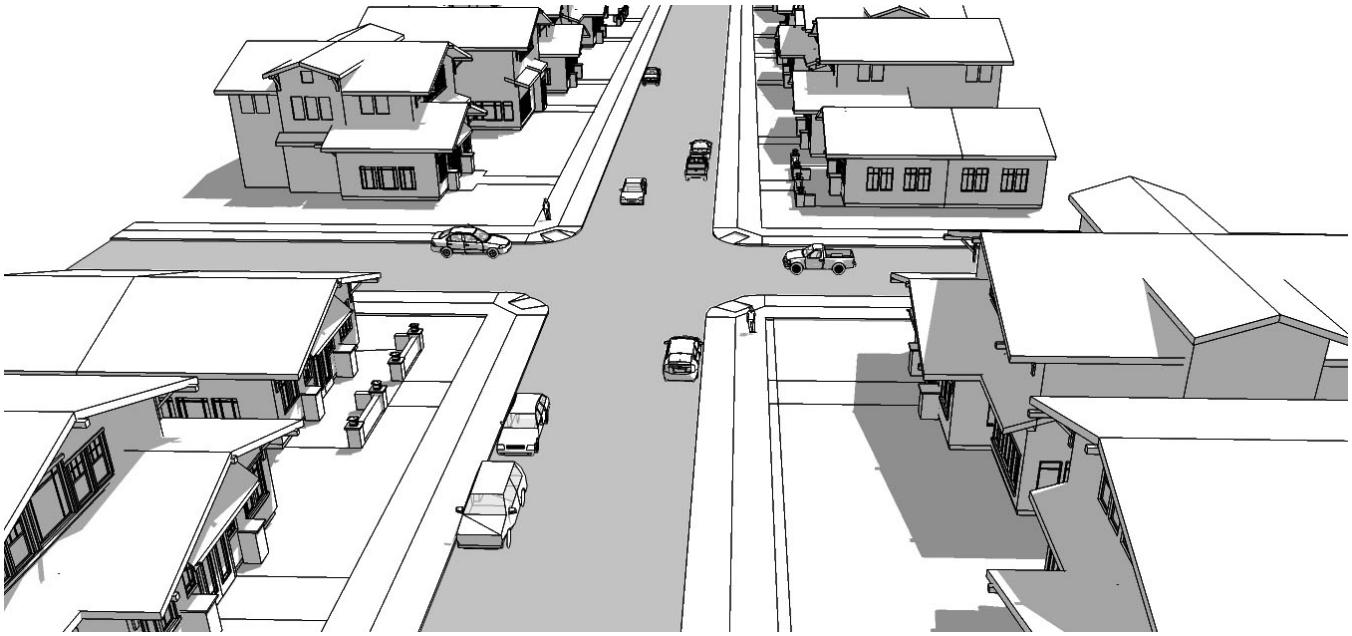
Figure UD-31: Parklet



RECOMMENDATIONS

- **A** *Sidewalk widening increases usable space for pedestrians, bicycle parking, and planted bulbouts.*
- **B** *Bicycle lanes provide designated lanes for bicyclists to travel safely between neighborhoods.*
- **C** *Enhanced furnishings, landscaping, and building façades add vitality to corridors and create identifiable streetscapes.*
- **D** *Bike corrals or bike share stations can replace one parking space and can be installed near corners.*
- **E** *Provide parklets in locations with active storefronts and heavy foot traffic.*

Figure UD-32: Local Street Types



BEFORE: Streets are designed to provide access to individual residences. Streets are generally two lanes with on-street parking, parkways, and sidewalks.

AFTER: Streets can be transformed to increase safety, walkability, and improved character.

RECOMMENDATIONS

A ***Consider providing bulbouts at intersections to keep crossing distances as short as possible, to increase landscape areas, and to slow traffic at intersections.***

B ***Incorporate bike route information on bike-friendly streets designated as Class III Bike Routes.***

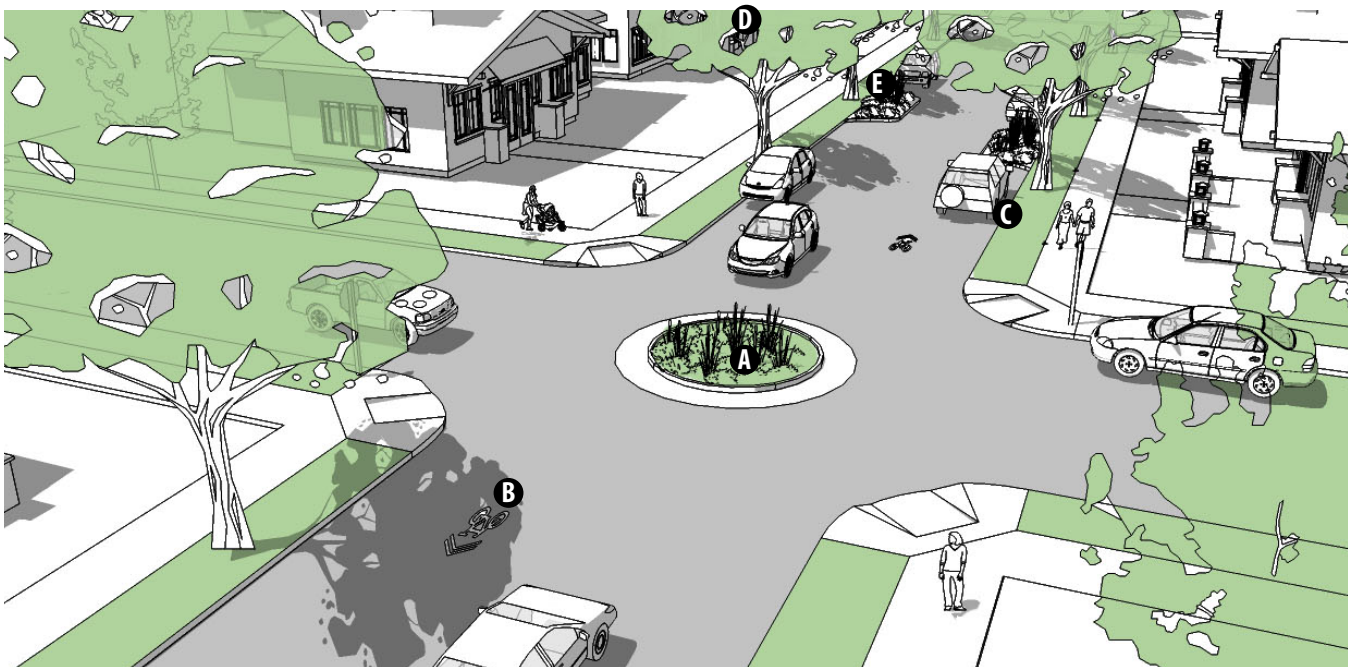
C ***Revitalize landscape parkways with appropriate landscaping.***

D ***Flow-through planters in bulbouts treat stormwater run-off. Use bulbouts to help reduce traffic speed and provide planters for additional street trees.***

E ***Incorporate pinchpoints where curb extensions may be applied mid-block to slow traffic.***

F ***Enhance the street corridor with consistent street tree planting.***

Figure UD-33: Local Street Type with Mini Roundabout

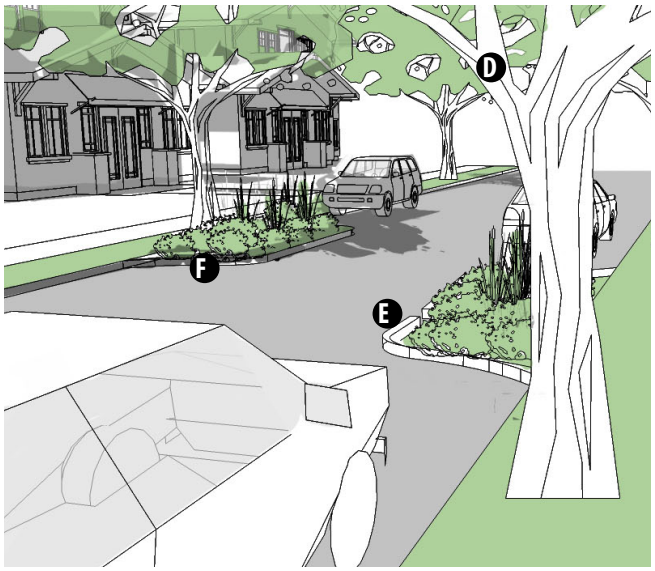


Local Street Types can be transformed to increase safety, walkability, and improved character.

RECOMMENDATIONS

- **A** ***Incorporate mini roundabouts on local streets to slow traffic and increase bicycle and pedestrian safety at intersections.***
- **B** ***Incorporate bike route information on bike-friendly streets designated as Class III Bike Routes.***
- **C** ***Revitalize landscape parkways with appropriate landscaping.***
- **D** ***Enhance the street corridor with consistent street tree planting.***
- **E** ***Utilize flow-through planters in bulbouts to treat stormwater run-off. Use bulbouts to help reduce traffic speed and provide planters for additional street trees.***
- **F** ***Incorporate pinchpoints where curb extensions may be applied mid-block to slow traffic.***
- **G** ***Consider providing bulbouts at intersections to keep crossing distances as short as possible, to increase landscape areas, and to slow traffic at intersections.***

Figure UD-34: Pinchpoints



Trees and Landscaping

STRATEGY No. 39: Beautify the City with trees and landscaping while being conscious of water resources and utilizing sustainable practices.

- **Policy UD 39-1:** Accommodate large canopy street trees that contribute to the City's urban forest, enhance street character and neighborhood identity, and provide shade for pedestrians and parked cars and bikes.
- **Policy UD 39-2:** Identify gaps in street tree canopy and expand and maintain new tree plantings.
- **Policy UD 39-3:** Explore cost-effective options to increase and sustain the Urban Forest; maintain trees to reduce the impacts of drought, diseases and pests, and construction and storm damage.
- **Policy UD 39-4:** Ensure landscaping for new projects complies with Title 23, Chapter 2.7 of the California Code of Regulations, Model for Efficient Landscape Ordinance.
- **Policy UD 39-5:** Integrate native, drought-tolerant, or low-water-use plant species in streetscapes and design for ease of maintenance to assure their longevity and limit water and resource use.
- **Policy UD 39-6:** Limit the use of palm trees, except for in signature areas.
- **Policy UD 39-7:** Consider providing bioswales, pervious strips, flow-through planters, and pervious pavement to help infiltrate stormwater runoff before it enters the sewer system.

Use drought tolerant trees and landscaping.

Landscaping in bulbouts and consistent street trees help define the street edge and beautify the streetscape.

Trees and landscaping enhance a City's urban forest and streetscape character.

Flow-through planters provide filtration of surface runoff.

Parking Lots, Driveways, and Access Points

STRATEGY No. 40: Design parking lots, structures, driveways, and access points to promote walkability, reduced trips, and promote sustainability.

- **Policy UD 40-1:** Minimize the visual impact of parking structures by encouraging the first floor to be wrapped with pedestrian-friendly uses and by urban design and landscaping features along pedestrian-oriented street frontages.
- **Policy UD 40-2:** Provide well-marked and convenient pedestrian access through parking areas to separate pedestrian and vehicular traffic.
- **Policy UD 40-3:** Beautify and screen parking lots located adjacent to a street edge with landscaping, shade trees, and decorative paving treatments.
- **Policy UD 40-4:** Use planter beds, decorative paving materials, and safe pedestrian paths to break up large areas dedicated to parking.
- **Policy UD 40-5:** Promote the use of pervious surfaces (including paving), low-impact development strategies, and natural run-off infiltration systems into parking lot design.
- **Policy UD 40-6:** Enhance driveway access points with ornamental landscaping, accent paving, and lighting.
- **Policy UD 40-7:** Explore opportunities to incorporate innovative parking solutions, such as lifts and tandem parking, to help meet parking requirements.
- **Policy UD 40-8:** Manage existing parking resources and implement strategies such as shared use parking, especially in Parking Impacted Areas, discussed in the Mobility Element.

Parking structures should be visually appealing on all frontages.

Beautify parking lots adjacent to streets with adequate setbacks for landscaping.

Maintain and manage existing parking resources.

Pedestrian Infrastructure

STRATEGY No. 41: Connect neighborhoods, corridors, and centers by maintaining and providing for walkable blocks.

- **Policy UD 41-1:** Encourage new developments to incorporate pedestrian amenities and pathways that provide direct, convenient, and safe access to public sidewalks and streets.
- **Policy UD 41-2:** Explore opportunities to improve connections among the downtown, corridors, campuses, and neighborhoods to create interconnected walking environments.
- **Policy UD 41-3:** Maintain and enhance the street grid network and short blocks that support all modes of transportation in Long Beach.
- **Policy UD 41-4:** Provide street furnishings in the pedestrian zone to encourage walking and areas to stop and rest.
- **Policy UD 41-5:** Promote enhancement, repair, and maintenance of alleys, paseos, paths, and trails.
- **Policy UD 41-6:** Encourage the use of specialty paving or artistic ground treatment, such as painted concrete, where alleys intersect to enhance pedestrian activity.
- **Policy UD 41-7:** Provide wayfinding signs, pedestrian lighting for safety and security, benches, and public art along alleys, paseos, paths, and trails to enhance neighborhood character and walkability.
- **Policy UD 41-8:** Provide mid-block pedestrian connections between the street and alley on commercial blocks to encourage pedestrian discovery and safe passages.

Paving and landscaping enhance pedestrian connections through parking areas.

Bicycle Infrastructure

STRATEGY No. 42: Continue promoting the City's vision to become the most bicycle-friendly city in the United States. Refer to additional policies provided in the Mobility Element.

- **Policy UD 42-1:** Support and enhance bicycle streets by strategically locating bicycle facilities (like bicycle boulevards, bike racks and corrals, bike stations, and bike rental/share facilities), and reducing conflicts between pedestrians, bicyclists, and vehicles.
- **Policy UD 42-2:** Encourage the integration of bike corrals and other transit amenities into projects located at heavily used transit stops, retail areas, and activity centers.
- **Policy UD 42-3:** Support Long Beach's bike share program.
- **Policy UD 42-4:** Provide bicycle facilities that connect activity centers.

Shared lane markings guide bicyclists and notify motorists to be cautious of shared use lanes.

Bike share programs include bicycles with GPS technology for tracking, and kiosks that use solar power.

Transit Infrastructure

STRATEGY No. 43: Establish comfortable and safe transit infrastructure. Refer to additional policies provided in the Mobility Element.

- **Policy UD 43-1:** Promote the integration of transit stop amenities into the site or landscape design of a project, such as rain or sun protection, seating, and trash receptacle, where appropriate and feasible.
- **Policy UD 43-1:** Create and encourage the use of a route/bus information theme to transit centers (or elements), so that they are visually similar, recognizable, and have an identity that is specific to Long Beach.
- **Policy UD 43-3:** Provide transit infrastructure within 1/4 mile of all bus and transit stops.

1st Street bus shelters provide shade, seating, and architectural character.

Provide and maintain safe pedestrian connections between transit uses.

Administration + Implementation

Maintaining the Urban Design Element

5

"A city is not an accident but the result of coherent visions and aims."

Leon Krier
The Architecture of Community

5

Administration + Implementation

Maintaining the Urban Design Element

Introduction 89

» Administering a Community Design Element 89

» Consistency 90

Implementation 91

» Strategies For a Comprehensive Update to the Zoning Code to Develop a Hybrid Zoning and Development Code 91

» Strategies to Integrate Design Guidelines 91

» Strategies for Areas of Change and Areas of Regional Serving Facilities PlaceType 92

» Strategies to Create Great Places 92

» Strategies to Improve Urban Fabric 93

» Strategies to Improve Edges, Thoroughfares, and Corridors 93

» Strategies to Improve Public Spaces 93

ADMINISTRATION + IMPLEMENTATION

Introduction

The Urban Design Element provides the highest level of design and development guidance on a citywide basis. It provides direction and guidance that will be implemented through design guidelines, specific plans, zoning documents, and through the site plan review process. In addition, the Urban Design Element provides more details about what the PlaceTypes are and how those PlaceTypes work internally (within the PlaceType) and with adjacent PlaceTypes, using the mixed use corridor and residential interface as the most common example.

This section discusses the following:

» Authority from Office of Planning and Research Guidelines to create an Urban Design Element as an optional element.

» Approach to modify the Urban Design Element and make relevant.

» How best to implement Urban Design Element principles.

» Specific steps/plans/actions to be taken.

Administering an Urban Design Element

The State of California's Governor's Office of Planning and Research, under California Government Code 65303, allows a city or county to adopt "any other elements or address any other subjects, which, in the judgement of the legislative body, relate to the physical development of the county or city." Once adopted, this Urban Design Element will carry the same legal weight as any of the seven mandatory elements and will be consistent to all the other elements, as required by §65300.5.

The Office of Planning and Research (OPR) states, "A community design element may provide additional direction, beyond that of the land use element, to the planning area's development pattern, form, structure, and sense of place. A community design element may provide the basis for aesthetic regulation of public and private land and structures. The policies and programs of a community design element may provide specific guidance to enhance the sense of place and quality of life in the planning area. It should bring together the principles of the other elements into an overall set of qualitative policies. It may be used to establish principles to guide the form and appearance of neighborhoods, streets, parks, public facilities, new development, and redevelopment."

OPR also indicates relevant issues that should be addressed in a community design element. The following is a list of basic issues that should be covered:

» *Community Form*: Elements that define the character of the community (e.g., viewsheds, parks, open space, airport, freeways, ridgelines, and rivers)

» *Neighborhood Structure*: Favorable features that characterize the neighborhoods in the planning area. Street types, parks, landscaping, lot sizes, boundary elements, and architectural types all contribute to the sense of place.

» *Community Conservation*: Patterns of open space, circulation, and landmarks that provide identity to the planning area and neighborhoods, making them more livable. The positive attributes of existing neighborhoods should be preserved and utilized in planning for revitalization with common and related themes.

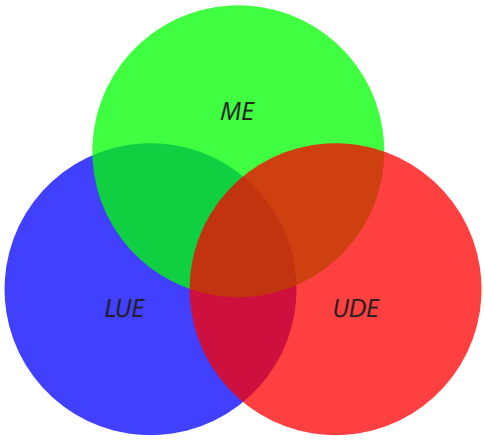
» *Commercial/Industrial Connections*: Office buildings and office and industrial parks may include patterns and features that enhance or detract from the existing community or the general plan vision of the future. Specific design policies should be developed with the input of both the public and business interests.

Refer to the OPR General Plan Guidelines for additional information.

Consistency

To ensure that the goals, policies, implementation strategies, and neighborhood strategies of this Element are systematically implemented, State law requires that the actions and decisions Long Beach approves be consistent with this Urban Design Element and the General Plan 2035. This Urban Design Element (UDE) is most closely tied to the Land Use Element (LUE) and Mobility Element (ME).

- *LUE* – Defines what goes where, defines the PlaceTypes, and applies them as land use designations to the City
- *ME* – Defines how to get there and some guidance on how to best design the streets/public realm; provides content-sensitive street design to complement and support the adjacent uses
- *UDE* – Defines what the City looks like, describes the various components of the City and how those pieces fit together, and brings it all together, especially focusing on where the private and public realm intersect at the street edges



This diagram shows the relationship between the Mobility Element, Land Use Element, and Urban Design Element.

Adoption of this UDE will provide highest policy level, citywide urban design guidance, recognizing that the City has developed numerous topical and area-specific design guidance since the 1958 Citywide Master Plan; the creation of the original General Plan in the early 1970s; and subsequent zoning, planning, and Redevelopment Project Area documents since then. Implementation through the update of existing design guidelines, street design manual, and other related documents will implement the policies of the UDE and keep the UDE applicable going forward (see specific steps below).

The contents of the UDE will be revisited, along with the next major update of either the LUE or ME, to ensure internal General Plan consistency and make sure that the document reflects the community's shared vision for the future at that time. Because the LUE, not the UDE, is the document that designates the PlaceTypes, no on-going consistency review for UDE is expected when LUE text or designation amendments are made as a result of individual development projects in the future.

Amendments to the General Plan would be subject to OPR guidelines and City Council review and approval. Adoption of design guidelines would be adopted as policy or by ordinance to become law or design requirements, or could simply provide guidance for future development and capital projects for development projects, capital improvement projects, or other types of physical improvements.

Implementation

Strategies for a Comprehensive Update to the Zoning Code to Develop Hybrid Zoning and Development Code

STRATEGY No. 43: Develop a zoning code that is consistent with the PlaceTypes, that balances flexibility and predictability of use, is sensitive to the way the City has developed over the decades, and encourages future growth to occur in the Areas of Change.

- Consolidate or eliminate outdated Planned Developments districts.
- Provide guidance for:
  - Economic vitality/job creation for land uses.
  - Appropriate infill/density.
  - Mansionization.
  - Crackerboxes.
  - Corridors and transitions.
- Develop standards and policies that are building form and placement-based, rather than traditional land use based.
- Integrate Urban Design Element policies and strategies into the Zoning Code update to ensure integration of concepts into everyday practice.
- Update R-3 and R-4 design standards (Sedway Cook, 1986) to meet more modern standards. Provide graduated density as lot sizes and depths increase with higher densities for moderate MFR and TOD PlaceTypes.

Strategies for Areas of Change

STRATEGY No. 44: Develop implementation documents, such as specific plans, area plans, and design standards for Areas of Change identified in the Land Use Element.

Strategies to Integrate Design Guidelines

STRATEGY No. 45: Finalize Designated Historic Districts Guidelines document.

STRATEGY No. 46: Integrate design guidelines into existing and future planning efforts such as:

- New specific plans
- Local Corridor and Pedestrian Districts
- Downtown District
- SEASP
- Long Beach Boulevard
- Airport Area
- Traffic Circle

STRATEGY No. 47: Consolidate and update design guidelines of Planned Developments near the Long Beach Airport and the waterfront.

STRATEGY No. 48: Develop topical design guidelines for specific PlaceTypes, such as for Multifamily Residential and Transit-Oriented Development, pedestrian priority areas identified in the Mobility Element, and as part of the street design standards manual (Mobility Element, MOP IM-1).

STRATEGY No. 49: Update existing and pending, or develop new design guidelines, for those areas of the City where special care for infill and remodeling is needed and where change is most likely to occur.

Strategies to Create Great Places

STRATEGY No. 50: Incentivize redevelopment of underutilized parcels and adaptive reuse projects.

STRATEGY No. 51: Develop guidelines, standards, and incentives to facilitate good design and use of quality materials, encourage adaptive reuse, reduce waste, maintain local character, promote sustainable and healthy living practices, and support existing building preservation, rehabilitation, and integration.

STRATEGY No. 52: Strengthen or provide additional code enforcement.

STRATEGY No. 53: Continue to create and implement standards and guidelines that support sustainable development projects, such as the City's Construction & Demolition Debris Recycling (C&D) Program and the Low Impact Development policy.

Map UD-13
AREAS OF CHANGE MAP

Areas of Change Description

1 More Open Space
2 Convert to Neo-Industrial Uses
3 Promote Regional-Serving Uses
4 Transition from Industrial to Commercial Uses
5 Promote Transit-Oriented Development Uses
6 Continue Downtown Development
7 Promote Infill and Redevelopment to Support Transit
8 Redevelop to Highest and Best Use

Legend

PlaceTypes

- OS - Open Space

Neighborhoods

- N - Founding and Contemporary Neighborhood
- MFR -L - Multi-Family Residential - Low
- MFR -M - Multi-Family Residential - Moderate

Mixed Use

- NSC-L - Neighborhood-Serving Center or Corridor - Low
- NSC-M - Neighborhood-Serving Center or Corridor - Moderate
- TOD-L - Transit-Oriented Development - Low
- TOD-M - Transit-Oriented Development - Moderate

Employment

- CC - Community Commercial
- I - Industrial
- NI - Neo-Industrial

Unique

- RSF - Regional-Serving Facility
- DT - Downtown
- WF - Waterfront

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

Strategies to Improve Urban Fabric

STRATEGY No. 54: Focus on streetscape improvements within Neighborhood Serving Centers and Corridors.

STRATEGY No. 55: Incentivize and regulate infill projects that support the designated PlaceType with appropriate use, scale, compactness of development, and design character.

STRATEGY No. 56: Leverage private investment to incorporate site furnishings and street trees as part of a development's master plan.

STRATEGY No. 57: Implement strategies and recommendations identified in the Community Livability Plan and the Westside Livability Plan for the I-710 Corridor Neighborhoods.

Strategies to Improve Edges, Thoroughfares, and Corridors

STRATEGY No. 58: Create or define streetscape character along the following major thoroughfares: Pacific Coast Highway, Ocean Boulevard, Lakewood Boulevard, Artesia Boulevard, Atlantic Avenue, Anaheim Street, 7th Street, Long Beach Boulevard, Carson Street, and Los Coyotes Diagonal.

STRATEGY No. 59: Enhance and improve southeast waterfront areas through a planning process that engages the community. Refer to Areas of Change in the Land Use Element.

STRATEGY No. 60: Create standards for street wall design to maintain consistency along the street edge. Each neighborhood should include the following standards:

- Variation in the street wall.
- Prominent entrances and patios.
- Transparency and pedestrian engagement.
- Awnings and canopies.
- Setback and landscape design.
- Pedestrian zone in front of a building.

STRATEGY No. 61: Create and complete a Street Tree Master Plan.

STRATEGY No. 62: Develop streetscape plans for high volume pedestrian areas to provide bulbouts at the ends of blocks and at mid-block crossings. Shorten long blocks and narrow street crossings by reducing the actual distance the pedestrian has to traverse. Include enhanced landscaping, planters, and street furniture where feasible.

STRATEGY No. 63: Identify deficiencies in public parks, plazas, and amenities and develop strategies to provide public infill development.

STRATEGY No. 64: Create and adopt a City-wide Gateway Identification Program. Identify opportunity sites, create design criteria, and encourage placement of landmark signs in Long Beach.

Strategies to Improve Public Spaces

STRATEGY No. 65: Ensure adherence to design guidance for pedestrian, bicycle and transit infrastructure by requiring that all projects under Site Plan Review be reviewed for adherence to UDE standards and recommendations.

STRATEGY No. 66: Establish guidelines and zoning overlays, as appropriate, to regulate development within scenic areas and for iconic sites.

STRATEGY No. 67: Increase the visibility and awareness of visual resources available to all segments of the population.

STRATEGY No. 68: Identify a network of public and private spaces and provide incentives for development to enhance open spaces beyond minimum requirements.

STRATEGY No. 69: Identify locations and promote the establishment of business improvement districts to create and maintain public spaces.

STRATEGY No. 70: Develop and implement an Urban Forestry Plan to assure the City is cultivating a variety of climate and location-appropriate tree species. Environmental benefits to neighborhoods include reducing the heat island effect, processing carbon dioxide into oxygen, and slowing the percolation of rainwater.

This page intentionally left blank.

Photo Credits:

Cover	Thomas McConville
Section 1	Thomas McConville
Pg 3	Berlin Bistro web page
Pg 4	RRM Design Group (top)
Pg 4	Billy Hustace (bottom)
Section 2	Andy Witherspoon
Pg 7	Thomas McConville
Pg 8	Andy Witherspoon (left)
Pg 8	Thomas McConville (right)
Pg 9	Thomas McConville
Pg 13	Historical Society of Long Beach
Pg 14	Thomas McConville (left)
Pg 14	Billy Hustace (right)
Pg 15	RRM Design Group
Pg 16	Historical Society of Long Beach (left)
Pg 16	Snug Top Water Tower (right)
Pg 17	Long Beach Skyline
Pg 19	RRM Design Group
Pg 20	Thomas McConville
Section 4	Billy Hustace
Pg 25	Thomas McConville
Pg 26	Andy Witherspoon
Pg 27	RRM Design Group
Pg 28	Andy Witherspoon
Pg 29	Andy Witherspoon (top)
Pg 29	Long Beach Development Services (bottom)
Pg 30	Andy Witherspoon (top)
Pg 30	Historical Society of Long Beach (bottom)
Pg 32	Urban Lab (top)
Pg 32	Thomas McConville (bottom)
Pg 33	Thomas McConville (top and center)
Pg 33	Andy Witherspoon (bottom)
Pg 34	Andy Witherspoon (top)
Pg 34	RRM Deisng Group (bottom)
Pg 35	Long Beach Development Services (top)
Pg 35	Thomas McConville (middle)
Pg 35	Thomas McConville (bottom)
Pg 36	Andy Witherspoon (top)
Pg 36	Thomas McConville (center)
Pg 36	Andy Witherspoon (bottom left and right)
Pg 37	RRM Design Group (top)
Pg 37	Andy Witherspoon (bottom)
Pg 38	Thomas McConville (top)
Pg 38	Long Beach Development Services (bottom)
Pg 44	Andy Witherspoon
Pg 52	Andy Winterspoon
Pg 54	Creative Offices
Pg 56	Andy Witherspoon
Pg 58	Andy Witherspoon (top and bottom)
Pg 58	RRM Design Group (center)
Pg 60	Billy Hustace
Pg 62	El Dorado Park Nature Center
Pg 64	Long Beach Development Services (top)
Pg 64	Andy Witherspoon (center)
Pg 64	RRM Design Group (bottom)
Pg 65	RRM Design Group (top)
Pg 65	Rotary Centennial Park
Pg 66	Long Beach Development Services (top and center)
Pg 66	Andy Witherspoon (bottom)
Pg 67	RRM Design Group
Pg 68	Andy Witherspoon
Pg 69	RRM Design Group
Pg 71	Single Family Large Lot
Pg 72	RRM Design Group
Pg 74	Andy Witherspoon
Pg 75	RRM Design Group
Pg 77	RRM Design Group (top and bottom)
Pg 83	RRM Design Group
Pg 84	Thomas McConville (top)
Pg 84	Andy Witherspoon (bottom)
Pg 85	Andy Witherspoon
Pg 86	Billy Hustace (top right)
Pg 86	Andy Witherspoon (bottom right)
Section 5	Governor George Deukmejian Courthouse
Back	Long Beach Development Services

Follow us!

www.facebook.com/LongBeachDevelopmentServices

@LongBeach DS

Long Beach Development Services
333 W. Ocean Blvd., 3rd Floor | Long Beach, CA 90802 | 562.570.3807 | www.lbds.info