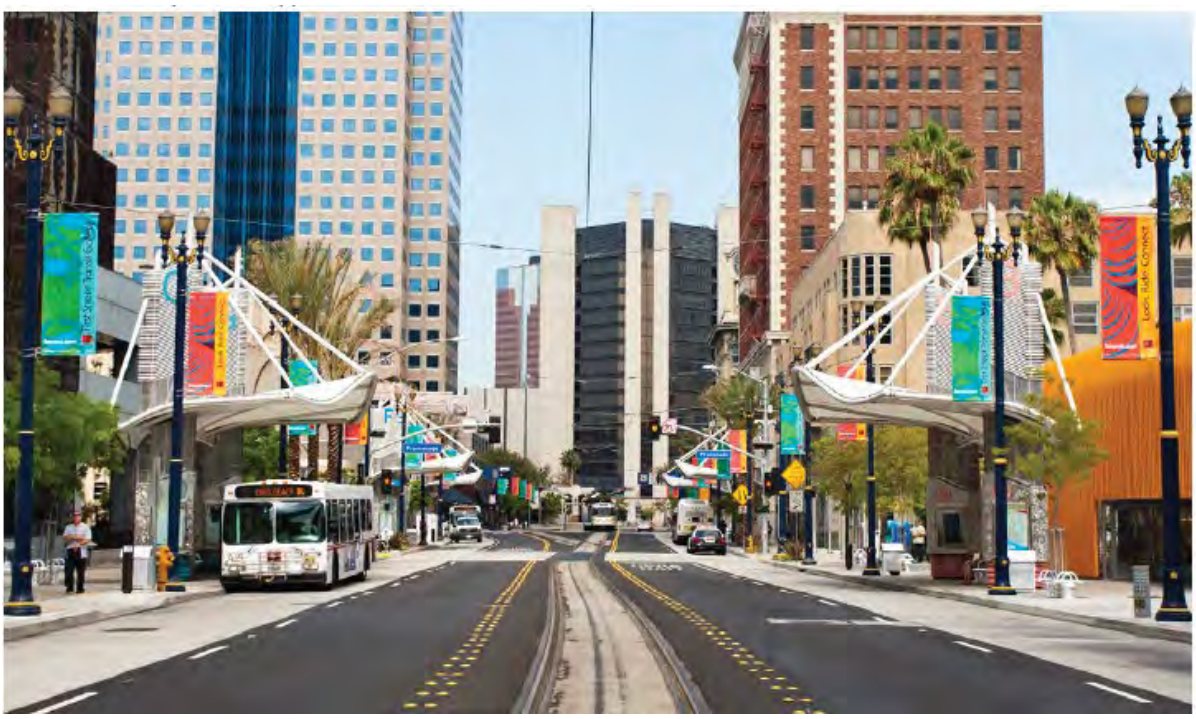
VOLUME I:

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
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June 2019

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that local government agencies, before taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report (EIR) is a public document designed to provide both the public and local and State governmental agency decision-makers with an analysis of potential environmental consequences to support informed decision-making.

This Executive Summary has been prepared according to *State CEQA Guidelines* Section 15123 for the Recirculated Draft EIR for the proposed General Plan Land Use and Urban Design Elements Project (proposed project). This Recirculated Draft EIR has been prepared for the City of Long Beach (City) to analyze the proposed project's potential impacts on the environment; to propose mitigation measures for identified potentially significant impacts that would minimize, offset, or otherwise reduce or avoid those environmental impacts; and to discuss alternatives that could reduce the potentially significant impacts of the proposed project.

1.2 SUMMARY OF LOCATION AND SETTING

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 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, which traverses the western portion of the City from north to south), Interstate 405 (I-405, which traverses the central portion of the City from northwest to southeast), State Route 91 (SR-91, which traverses the northernmost portion of the City from east to west), State Routes 103 and 47 (SR-103 and SR-47, respectively, which traverse the western border of the City from north to south), and State Route 1 (SR-1, which traverses the central portion of the City from east to west), commonly referred to as Pacific Coast Highway (PCH or SR-1). In addition, Interstate 605 and State Route 22 (I-605 and SR-22, respectively, and located northeast and east of the City) provide access to the eastern portion of the City.

In addition, a variety of transit routes maintained by the Metropolitan Transportation Authority (Metro), the Long Beach Transit, and the Orange County Transportation Authority (OCTA) provides both regional and local access to and within the City. A variety of bicycle lanes and paths serve the City, including regional connections along PCH, the San Gabriel River pathway, and the Los Angeles River pathway.

1.3 SUMMARY OF PROJECT DESCRIPTION

The proposed project is an update to the City's existing General Plan and is intended to guide growth and future development within the planning area through the horizon 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 the Scenic Routes Element (SRE). The following discussion summarizes the key components of each of the proposed General Plan Elements.

See Chapter 3.0, Project Description, for a complete description of the project components.

1.3.1 Land Use Element

The project proposes to update the current General Plan LUE with a new LUE that would reflect the current needs and opportunities within the City, update land uses and bring the General Plan into conformity with the City's recently adopted General Plan Mobility Element (October 2013), and provide for future development opportunities that would accommodate projected growth outlined in the Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and housing needs established in the City's General Plan 2013–2021 Housing Element and the 2016 Assessment of Fair Housing (AFH).

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 uses 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 proposed 14 PlaceTypes are listed below.

1. Open Space
2. Founding and Contemporary Neighborhood
3. Multi-Family Residential—Low
4. Multi-Family Residential—Moderate
5. Neighborhood-Serving Centers and Corridors—Low
6. Neighborhood-Serving Centers and Corridors—Moderate
7. Transit-Oriented Development—Low
8. Transit-Oriented Development—Moderate
9. Community Commercial
10. Industrial
11. Neo-Industrial
12. Regional-Serving Facility
13. Downtown
14. Waterfront

Major land use changes proposed as part of the LUE are identified as Major Areas of Change (refer to Figure 3.5, Major Areas of Change, in Chapter 3.0, Project Description). The eight primary areas where changes associated with the updated LUE would be focused are listed below.

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 its highest and best use

In total, the LUE proposes opportunity for major changes to approximately 13 percent of the land area (or the equivalent of 4,180 acres) in the City. 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 and the demand for new land uses and increased densities to alleviate overcrowding of existing residences and accommodate the projected population growth (refer to Section 4.6, Population and Housing, in Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures, for further information related to population growth).

1.3.2 Urban Design Element

The 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 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.

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. In addition, 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.

1.4 SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(b) of the *State CEQA Guidelines* requires that an EIR describe significant impacts that cannot be avoided if the proposed project is implemented, including those effects that can be mitigated but not reduced to a less than significant level. As determined in this Recirculated Draft EIR, implementation of the proposed project would result in significant and unavoidable adverse impacts related to air quality, global climate change, noise, and transportation. With the exception of air quality, global climate change, noise, and transportation impacts, all other potentially significant impacts have been effectively mitigated to a less than significant level.

1.4.1 Air Quality

The proposed project would have significant unavoidable impacts related to conflicts with an adopted Air Quality Management Plan, the violation of applicable air quality standards, and the exposure of sensitive receptors to substantial pollutant concentrations. The project would result in conflicts with the 2016 AQMP because air 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. Construction and operational activities associated with future development occurring under the proposed project would be significant and unavoidable because the scale of future specific projects is not known and project-specific emissions cannot be estimated. Compliance Measure CM AQ-1 requires future projects to comply with South Coast Air Quality Management District (SCAQMD) rules and Best Management Practices (BMPs) to reduce air pollutant emissions during the construction of future projects facilitated by approval of the proposed project. In addition, Mitigation Measures MMs AQ-1, AQ-2, and AQ-3 require the preparation of project-specific technical assessments evaluating potential construction and operational-related air quality impacts to ensure that criteria pollutant emissions and emissions of toxic air contaminants (TACs) are reduced to the maximum extent feasible. However, in an abundance of caution, the potential emissions impact associated with the operation of future projects facilitated by the proposed project would remain significant and unavoidable even with implementation of Mitigation Measures MMs AQ-1, AQ-2, and AQ-3.

1.4.2 Global Climate Change

The proposed project would have significant unavoidable impacts related to the generation of greenhouse gas (GHG) emissions that could significantly impact the environment. Implementation of the proposed project would contribute to Global Climate Change (GCC) through direct and indirect emissions of GHGs from land uses within the City of Long Beach. On a service population basis, the anticipated General Plan build out would reduce the GHG emissions from 3.8 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per service population (MT of CO_2e/yr/SP) under existing conditions down to 2.5 MT CO_2e/yr/SP (with reduction measures incorporated). 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 in its draft *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo* (2018) and used for purposes of this environmental evaluation. As such, Mitigation Measure MM GHG-1 would be required to reduce GHG emissions. This measure requires the preparation of a GHG Reduction Plan or Climate Action Plan to ensure that future development projects meet or exceed the statewide goals aimed at the reduction of GHG emissions. In addition to the proposed mitigation measure, additional statewide measures would be necessary to reduce GHG emissions from development that may occur with adoption of the proposed project to meet the long-term GHG reduction goals. Although the implementation of the proposed project would result in lower GHG emissions within the City as compared to existing conditions, because the project would generate emissions above the interim threshold level and because no additional statewide measures are currently available that can be implemented, GHG emission impacts under the horizon year 2040 scenario would remain significant and unavoidable.

1.4.3 Noise

The proposed project would result in significant unavoidable construction-related impacts. Construction activities associated with development anticipated under the project would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced. Some projects may have unusual or extremely loud construction activities (e.g., pile driving, nighttime construction work, or 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 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, because the location, the proximity to sensitive receptors, and the type of construction equipment associated with new construction projects are all unknown at this time, in an abundance of caution construction noise impacts are considered significant and unavoidable.

1.4.4 Transportation

The proposed project would have significant unavoidable impacts related to conflicts with applicable plans, ordinances, and policies, as well as conflicts with an applicable Congestion Management Plan (CMP). The *Traffic Impact Analysis* (LSA 2019) prepared for the proposed project determined that 48 intersections could be significantly impacted by implementation of future development projects in the anticipated 2040 General Plan build out scenario based on the City's criteria. Potentially significant traffic impacts were also identified at freeway facilities. Although physical improvements that would retain the performance goal of level of service (LOS) D were identified, 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 (see Table 4.8.I). The City's Capital Improvement Program, Mobility Element, and/or applicable specific plans were also reviewed for pending and planned vehicle and non-vehicle capacity improvements throughout the City. As such, applicants for future discretionary projects would be required to comply with Mitigation Measure MM T-1. Mitigation Measure MM T-1 requires applicants for future projects to prepare a traffic improvement analysis to identify feasible physical improvements to reduce impacts at intersections within the planning area. While recommended improvements and implementation of Mitigation Measure MM T-1 could contribute to a reduced vehicle LOS, the effectiveness of these improvements cannot be quantified at this time, as future specific projects have not been identified; therefore, these improvements cannot be considered mitigation for the 48 impacted study area intersections for the purposes of CEQA. Therefore, impacts to the 48 intersections are considered significant and unavoidable for the horizon year of 2040.

In addition to identifying significant and unavoidable impacts at the 48 impacted intersections based on the City's criteria, the *Traffic Impact Analysis* also identified significant impacts at 4 of the 10 monitored intersections within the study area based on Los Angeles County's 2010 CMP criteria. Despite recommended improvements in Mitigation Measure MM T-1, potentially significant impacts to California Department of Transportation (Caltrans) intersections and freeway facilities may remain significant and unavoidable. Therefore, the impacts to these intersections are considered significant and unavoidable for the horizon year of 2040.

1.5 ALTERNATIVES

The following alternatives to the proposed project were selected for consideration, including the No Project Alternative as required by CEQA:

1.5.1 Alternative 1: No Project Alternative

This alternative would involve no amendments to the City of Long Beach's (City) General Plan, no adoption of PlaceTypes, and no changes to the existing land use designations in the City's planning documents. The existing General Plan Land Use Element (LUE) and the Scenic Routes Element (SRE) would continue to determine land uses and design principles that guide future development in the City.

1.5.2 Alternative 2: Reduced Project Alternative

This Reduced Project Alternative assumes the planning area would be subject to the LUE and UDE goals, strategies, and policies similar to those included under the proposed project, but with adjustments to the proposed PlaceType intensities. This alternative would decrease overall intensities by 25 percent on a citywide basis as compared to the proposed project. In total, Alternative 2 would facilitate 21,393 dwelling units (7,131 fewer residential units than the proposed project) and 10,156,963 square feet of non-residential uses (3,385,654 fewer non-residential square feet than the proposed project). Alternative 2 would require a General Plan Update/Amendment, a future Local Coastal Plan Amendment, and a Rezone Amendment, similar to the proposed project.

In evaluating an appropriate range of alternatives to the proposed project, a number of alternatives were considered and rejected by the Lead Agency. These included consideration of the following options: (1) consideration of alternative sites; (2) a Reduced Vehicle Miles Traveled (VMT)/Transit-Oriented Development Alternative; and (3) a Neighborhood-Serving Centers and Corridors Commercial-Only Alternative.

Each of these alternatives was rejected for differing reasons, as described further in Chapter 5.0, Alternatives.

Under the No Project Alternative, development would continue as allowed under the 1989 General Plan LUE and 1975 SRE and would result in 15,121 fewer housing units in the horizon year as compared to the proposed project. The No Project Alternative would not require a General Plan Update/Amendment, Local Coastal Plan Amendment, or Rezone Amendment. No change to the adopted land use designations would occur. Overall, impacts for the No Project Alternative would be similar to the proposed project, although incrementally reduced for air quality, GHG, and traffic under the horizon year (2040). However, similar to the proposed project, under the No Project scenario, significant unavoidable air quality, GHG, and traffic impacts would occur.

Under the Reduced Project Alternative (Alternative 2), significant unavoidable impacts related to air quality, GHG emissions, and transportation would occur, similar to the proposed project. Although the decreased efficiency of development intensity near transit in Alternative 2 may lead to more significant impacts related to some air quality, GHG, and transportation sub-sectors, due to the

reduction in development potential under Alternative 2, overall impacts would be less than with the proposed project.

Although overall environmental impacts would be reduced under Alternative 2, this alternative would not facilitate the same number of residential units (28,524) as anticipated under the proposed project that are required to alleviate existing issues related to affordability and overcrowding and could potentially exacerbate such conditions through 2040. As such, Alternative 2 would not allow the City to comply with State-mandated affordable housing requirements established during the RHNA process and the shortages identified in the AFH to the same extent as the proposed project. Moreover, failure to comply with the RHNA mandate is enforceable through the Housing Accountability Act and could result in a loss of funding to the City and legal action by the State, as evidenced by the State's recent actions elsewhere in Southern California. Therefore, impacts to population and housing would be increased, and considered significant and adverse under this alternative.

The *State CEQA Guidelines* require that if the environmentally superior alternative is the No Project Alternative, "the EIR also identify an environmentally superior alternative among the other alternatives" (*State CEQA Guidelines* Section 15126. 6(e)(2)). Alternative 2, Reduced Project Alternative, would lessen most of the significant environmental impacts or result in impacts similar to those associated with the proposed project, with the exception of housing, which would have greater impacts under this Alternative due to the reduced number of housing units that would be facilitated. As such, with the exception of the No Project Alternative, the Environmentally Superior Alternative would be the Reduced Project Alternative. This alternative would lessen significant environmental impacts or result in impacts similar to those associated with the proposed project.

Alternative 2 would promote livability, environmental quality, community health and safety, the quality of the built environment, and economic vitality (Project Objective 1); however, this alternative's consistency with the overall LUE goals of creating compact new development (Project Objective 4), job growth (Project Objective 5), and land use changes that coincide with the regional economy (Project Objective 6) would be achieved to a lesser extent due to the reduction in development potential. Alternative 2 would encourage sustainable development practices to create walkable and complete neighborhoods (Project Objectives 4, 12, 13, 14, 16, and 17). This alternative would achieve some of the Project Objectives related to the provision of diverse housing types but not to the same extent as the proposed project due to the reduction in development potential, and would preserve existing neighborhoods (Project Objectives 7 and 8); however, Alternative 2 would not meet Project Objective 2 related to meeting housing needs identified during the RHNA process (7,048 new dwelling units by the year 2021) and the AFH (21,476 housing units to address existing housing needs) to the same extent as the proposed project.

In summary, the reduction in air quality, GHGs, noise, and traffic impacts would be minimal in comparison to the economic value of providing housing and employment opportunities throughout the City.

The alternatives analysis is described in greater detail in Chapter 5.0, Alternatives.

1.6 AREAS OF CONTROVERSY

Pursuant to *State CEQA Guidelines* Section 15123, this EIR acknowledges the areas of controversy and issues to be resolved that are known to the City or that were raised during the scoping process. Major issues and concerns raised at the scoping meeting held on May 27, 2015, and comments submitted in writing during the Notice of Preparation (NOP) process included: (1) concerns regarding project-related impacts on air quality in the South Coast Air Basin; (2) concerns regarding the project's consistency with applicable land use documents, including the SCAG RTP/SCS; (3) concerns regarding the project's inclusion of land use goals and policies and zoning requirements that would allow for flexibility in housing densities and types on residential properties; (4) concerns regarding potential project-related conflicts with applicable plans, ordinances, and/or policies establishing measures of effectiveness for the performance of the circulation system; (5) potential project-related impacts to Caltrans facilities; (6) concerns regarding the ability of the City to provide water to accommodate new development allowed under the anticipated General Plan build out scenario; (7) concerns related to significant increases in allowable building heights and density within the Downtown area; and (8) concerns regarding the potential loss of open space and recreational resources resulting from project implementation.

Additional areas of controversy that were brought forth during the public review period for the 2016 Draft EIR included project-related impacts with respect to increased traffic throughout the planning area, increased density on the west side of the City and along the coast, and changes in the aesthetic character of the City. Please note that these are not exhaustive lists of areas of controversy, but rather key issues that were raised during the scoping process and public review period for the 2016 Draft EIR.

This Recirculated Draft EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures designed to reduce or eliminate potentially significant impacts of the proposed project.

1.7 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 1.A identifies the potential environmental impacts, proposed mitigation measures, and level of significance after mitigation is incorporated into the proposed project. Table 1.A also identifies cumulative impacts resulting from the proposed project. Environmental topics addressed in this Recirculated Draft EIR include: Aesthetics, Air Quality, Global Climate Change, Land Use and Planning, Noise, Population and Housing, Public Services, Transportation, Utilities, and Energy.

Refer to Section 2.0, Introduction, of this Recirculated Draft EIR for a discussion of additional effects found not to be significant through the NOP process (e.g., Agricultural Resources, Biological Resources, Cultural and Tribal Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Mineral Resources, Recreation, and Wildfires).

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
4.1: AESTHETICS		
Threshold 4.1.1: Would the project have a substantial adverse effect on a scenic vista? **Less than Significant Impact.** There are no City-designated scenic viewpoints or scenic corridors in the City. However, the City's existing Open Space Element requires protection of scenic features in the City, including beaches, bluffs, wetlands, and water bodies. Due to the prominence of existing urban and industrial developments adjacent to the Pacific Ocean and the Port of Long Beach, views of these resources would not be significantly altered by development envisioned under the proposed project. Further, future development facilitated by project approval would be designed according to the development strategies, policies, and standards in the proposed Urban Design Element (UDE) and would be subject to height and density/intensity limitations for each PlaceType as outlined in the proposed Land Use Element (LUE). The proposed UDE also includes development strategies and policies that consider the context of existing scenic vistas and neighborhoods when designing and implementing projects. Although future development facilitated by project approval would modify views to and from areas throughout the City, such as potentially blocking distant views of the San Gabriel Mountains from public vantage points, project applicants would be required to demonstrate consistency with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at preserving scenic vistas in the planning area. Therefore, potential impacts of the proposed project on scenic vistas would be less than significant, and no mitigation would be required.	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Threshold 4.1.3: In a non-urbanized area, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? **Less than Significant Impact.** The visual character and quality of the planning area would be preserved and enhanced through the application of goals, policies, strategies, and development standards outlined in the LUE and UDE that are intended to guide the quality and aesthetic value of existing and future development in the City. Future projects within the City would also be required to submit detailed plans to the City to ensure consistency with the City's design requirements (including those outlined in the proposed UDE) aimed at improving the visual character of the planning area. As such, project implementation would ensure that the majority of the planning area, including identified aesthetic resources and scenic vistas, would not be affected by future growth. Therefore, the proposed project would not substantially degrade the visual character of the planning area or conflict with applicable zoning and other regulations governing scenic quality, and no mitigation would be required.	No mitigation is required.	Less than Significant
Threshold 4.1.4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? **Less than Significant Impact.** Future development facilitated by the project would introduce new sources of light to the City that are typical of development projects. Future development projects would be required to comply with the design standards established in the proposed UDE and the City's Municipal Code. On-site landscaping proposed as part of new development projects would further reduce glare and would serve to screen	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
light sources to reduce the visual impact of lighting from buildings and parking lots. The City would review site plans and architectural renderings for new projects with an emphasis on the presence of reflective materials and proposed lighting to minimize potential impacts related to light and glare, and propose mitigation, if necessary. Although future development would introduce new sources of light that would contribute to the light visible in the night sky and surrounding area, the planning area is located within a highly urbanized area that is currently characterized by significant nighttime lighting. Therefore, the proposed project's impact related to light and glare would be less than significant, and no mitigation would be required.		
Cumulative Aesthetic Impacts. **Less than Significant Impact.** The cumulative aesthetic study area for the proposed project is the visual resource areas within the City's viewshed. The viewshed from the planning area includes vantage points with views of the Pacific Ocean, the Port of Long Beach, the Long Beach marinas, the San Gabriel Mountains, and the Santa Ana Mountains. Future development facilitated by the proposed project would change the visual character of the planning area, specifically within the Major Areas of Change, as compared to existing conditions. However, the site design, landscaping, and architectural design of future projects would be required to be consistent with goals, policies, strategies, and development standards established by the proposed UDE, which are intended to avoid, reduce, offset, or otherwise minimize identified potential adverse impacts of the proposed project or provide significant benefits to the community and/or to the physical environment. Furthermore, development envisioned by the proposed project is intended to improve the overall visual	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
character of the City through new development projects that would shape the urban environment of the City, while preserving existing development that defines its unique aesthetic character. The proposed project would introduce new sources of light and glare on the planning area as a result of future development projects facilitated by project approval. However, because the City is currently characterized as an urban environment with existing high levels of light pollution, light emitted by future development projects would not result in a cumulatively significant visual impact related to light and glare. Cumulative impacts are, therefore, considered less than significant, and no mitigation would be required.		
4.2: AIR QUALITY		
Threshold 4.2.1: Would the project conflict with or obstruct implementation of the applicable air quality plan? **Significant and Unavoidable Impact.** CEQA requires that general plans be evaluated for consistency with the AQMP. There are two key indicators of consistency. Indicator 1 relates to 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 relates to 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 the anticipated build out of the City and therefore, emissions of criteria pollutants associated with future development allowed for under the project could contribute emissions of PM10, PM2.5, NOx, and VOCs, which could affect	No feasible mitigation.	Significant and Unavoidable

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
attainment of the AAQS. Future development allowed 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. Based on the emissions modeling prepared for the project, 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. Growth expected under the proposed project was estimated based on SCAG projections for population and housing units in the City. Additional units included as part of the project 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		

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
compiled by SCAG to determine priority transportation projects and VMT in the SCAG region. Growth projections of the proposed project assume the 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. Therefore, the project would be consistent with the 2016 AQMP under Indicator 2.		
Threshold 4.2.2: Would the project violate any air quality standard or contribute to an existing or projected air quality violation? **Construction Emissions. Significant and Unavoidable Impact.** Construction activities associated with future projects facilitated by project approval would cause short-term emissions of criteria air pollutants. On average, the maximum construction emissions associated with the development activity allowed under the project are not anticipated to exceed the South Coast Air Quality Management District's (SCAQMD) thresholds for VOC, NO_X, CO, SO_X, $PM_{2.5}$, or PM_{10} emissions. However, because the scale of construction future activities has not been determined, maximum daily emissions associated with an individual development project could potentially be significant, and mitigation would be required. The proposed project includes goals regarding land use development and identifies policies designed to reduce emissions of criteria pollutants. While existing City policies and regulations and proposed LUE/UDE goals and policies are intended to	**Compliance Measure:** **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 volatile organic compounds (VOCs), nitrogen oxides (NO_X), 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	Construction and Operation Emissions: Significant and Unavoidable CO Hot Spots: Less than Significant

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
minimize impacts associated with nonattainment criteria pollutants, Compliance Measure CM 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 to ensure that the intended environmental protections are achieved. Additionally, Mitigation Measure MM AQ-1 requires 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. However, 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 significant and unavoidable. **Operation Emissions. Significant and Unavoidable.** Emissions associated with the anticipated General Plan build out 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, the decrease in emissions is associated with the overall decrease in vehicle miles traveled (VMT) and reduction in vehicle emission rates that would occur with or without the proposed 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. This analysis indicates that both VOC (an O_3 precursor emission) and CO emissions would exceed the SCAQMD thresholds under this scenario. Future development under the proposed project would be required to demonstrate compliance with the AQMP, SIP, California Air Resources Board's (CARB) motor vehicle standards; SCAQMD regulations for stationary sources and architectural coatings; the California Green Building Standards Code (CALGreen Code) building efficiency standards (Title 24, Part 11) and the California Energy Code Building Energy	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	

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Efficiency Standards (Title 24, Part 6); and the proposed LUE/UDE project goals and policies. Future projects would also be required to implement Mitigation Measure MM AQ-2, which requires the preparation of project-specific technical assessments to ensure that operational-related emissions are reduced to the maximum extent feasible. However, operational characteristics and the associated emissions for future specific development projects cannot be determined at the time of this analysis. Therefore, despite implementation of Mitigation Measure MM AQ-2, and in an abundance of caution, the potential emissions impact associated with the operation of the proposed project would remain significant and unavoidable. **Construction During Project Operation. Less than Significant Impact.** 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, in order to disclose a worst-case scenario, the Air Quality Impact Analysis (LSA 2019) included an analysis of average construction emissions along with the horizon year 2040 project emissions. It was determined that combined emissions would be below the significance threshold established by the SCAQMD for daily project emissions. **CO Hot-Spot Analysis**. **Less than Significant Impact.** 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. The anticipated General Plan build out would not produce the volume of traffic required to	handling and disposal regulations, contact the SCAQMD. **Mitigation Measures:** **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 Director of the City of Long Beach (City) Department of Development Services, or designee, 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, the following: • Require the following fugitive-dust control measures:	

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
generate a CO hot spot. Therefore, implementation of the proposed project would not result in CO hot spots. Impacts would be less than significant, and no mitigation is required.	o Use nontoxic soil stabilizers to reduce wind erosion. o Apply water every 4 hours to active soil-disturbing activities. o 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. (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.) ● Suspend all soil disturbance activities when winds exceed 25 miles per hour (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	

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
	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 the California Air Resources Board's (CARB) 2010 engine emission standards at 0.01 grams per brake horsepower-hour (g/bhp-hr) of particulate (PM) and 0.20 g/bhp-hr of nitrogen oxides (NO_X) 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 shall make the records available for inspection. **MM AQ-2:** Prior to future discretionary project approval, development project applicants shall prepare and submit to the Director of the City	

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
	Department of Development Services, or designee, 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	

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
	spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with 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.	
Threshold 4.2.3: Would the project expose sensitive receptors to substantial pollutant concentrations? **Less than Significant Impact with Mitigation.** **Localized Criteria Pollutants:** Construction emissions associated with future individual projects developed under the proposed project would have the potential to cause or contribute to	Refer to Compliance Measure CM AQ-1 and Mitigation Measure MM AQ-1, above. **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	Criteria Pollutants and Health Effects: Less than Significant with Mitigation TAC Emissions: Significant and Unavoidable

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
significant localized air quality impacts to nearby residential land uses within the planning area. 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, which may include use of special equipment. **Health Effects:** Localized construction impacts of future projects could potentially exceed Localized Significance Thresholds (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 ambient air quality standards (AAQS). 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. It is not expected that any future projects would generate 6,620 pounds per day of NO_X or 89,180 pounds per day of VOC emissions. Rather, based on the scale of development associated with the anticipated General Plan build out, construction projects would generate an average maximum of 46.5 pounds per day of NO_X and 60.5 pounds per day of VOC. 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 (refer to Compliance Measure CM AQ-1 and Mitigation Measure MM AQ-1) to ensure that potential health impacts associated with the construction of the proposed project would be less than significant.	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.	

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Significant and Unavoidable. **Toxic Air Contaminant (TAC) Emissions:** The proposed project includes a number of goals and policies that are intended to minimize TAC impacts associated with sensitive receptors. In addition, specific measures for future development projects are required 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 for certain large discretionary industrial or warehousing uses to evaluate 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. However, because the scale of individual project level emissions that would be result under implementation of the LUE 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.		
Threshold 4.2.4: Would the project result in other emissions (such as those leading to odors or dust) adversely affecting a substantial number of people? **Less than Significant Impact.** 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	No mitigation is required.	Less than Significant

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
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. Therefore, impacts associated with objectionable odors would be less than significant, and no mitigation would be required.		
Cumulative Air Quality Impacts. **Significant and Unavoidable Impact.** The cumulative study area analyzed for potential air quality impacts is the South Coast Air Basin (Basin). Each project in the Basin is required to comply with SCAQMD rules and regulations and is subject to independent review. Future development that may occur with implementation of the project would contribute criteria pollutants to the area during project construction and operation. However, future development under the proposed project would be required to comply with CARB motor vehicle standards, SCAQMD regulations from stationary sources and architectural coatings, CALGreen Code building efficiency standards (Title 24, Part 11) and the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6), and the proposed LUE/UDE project goals and policies.	Refer to Compliance Measure CM AQ-1, as well as Mitigation Measures MM AQ-1 through MM AQ-3.	Significant and Unavoidable

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Since the combination, number, and size of projects that could be under construction at any one time are unknown, even with implementation of MM AQ-1, the proposed project would result in significant cumulative construction emissions from criteria pollutants. Additionally, even with implementation of Mitigation Measure MM AQ-2, operational impacts from criteria pollutant emissions would contribute to an O_3 exceedance, which could hinder the attainment of air quality standards. Further, 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 Multiple Air Toxics Exposure Study (MATES). Therefore, air quality emissions associated with future development that may occur under the proposed project could result in cumulatively considerable impacts, even with implementation of mitigation. **Less than Significant Impact.** Cumulative impacts with respect to the generation of odors affecting a substantial number of people would be less than significant following compliance with odor policies enforced by the SCAQMD (including Rule 402) and City of Long Beach Municipal Code Section 8.64.040.		
4.3: GREENHOUSE GAS EMISSIONS		
Threshold 4.3.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? **Significant and Unavoidable Impact.** Implementation of the proposed project would contribute to global climate change (GCC) through direct and indirect emissions of greenhouse gases (GHGs) from land uses within the City of Long Beach (City). The anticipated build out of the proposed project would reduce the GHG emissions from 3.8 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per service population (MT of CO_2e/yr/SP) under existing conditions down to 2.5 MT of	**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 a CAAP to the City Council for adoption. The CAAP shall identify	Significant and Unavoidable

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
CO_2e/yr/SP. 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. While the proposed project includes various policies that 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 and efficiency threshold. Mitigation Measure MM GHG-1 would reduce GHG emissions. However, in addition to the proposed mitigation measure, additional statewide measures may be required in order to meet the service population threshold set by the Climate Action and Adaptation Plan (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.	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, which 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.	
Threshold 4.3.2: Would the project conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? **Less than Significant with Mitigation Incorporated.** In addition to the City's *Sustainable City Action Plan* (SCAP), the CARB's Scoping Plan, and the 2016–2040 RTP/SCS identify strategies to reduce GHG emissions, both of which are applicable to the proposed project. The proposed project and its policies would be consistent with applicable measures and goals identified in the City's SCAP, the CARB Scoping Plan, and SCAG's 2016–2040 RTP/SCS). Furthermore, with implementation of Mitigation Measure MM GHG-1, which requires the City to adopt a GHG Reduction Plan or Climate Action and Adaption Plan, the proposed project would not conflict with or impede	Refer to Mitigation Measure MM GHG-1, above.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
implementation of reduction goals identified in Assembly Bill (AB) 32 and Senate Bill (SB) 32. The project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. Further, the proposed project would result in a net reduction of overall GHG emissions as compared to existing conditions. Therefore, the proposed project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions.		
Cumulative Greenhouse Gas Emission Impacts. **Less than Significant Impact.** Although the proposed project is expected to emit GHGs, the emission of GHGs by any single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHGs from more than one project and many sources in the atmosphere that may result in GHG impacts. The resultant climate change consequences of those emissions, including sea level rise, could cause adverse environmental effects. The proposed project would result in a GHG emission profile that is lower than existing GHG emissions within the City. Additionally, since climate change is a global issue, it is unlikely that the proposed project would generate enough GHG emissions to influence GCC on its own. Because the proposed project's impacts alone would not cause or significantly contribute to GCC, project-related CO_2e emissions and their contribution to GCC impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts. Therefore, the proposed project would not result in a significant long-term cumulative impact on GCC (including sea level rise). Rising sea levels may affect the built environment, including coastal development such as buildings, roads, and	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
infrastructure. However, future projects facilitated under the proposed project would be planned in consideration of the conditions at the time they are proposed and would be evaluated on a project-by-project basis during environmental review for their potential to be affected by the change in sea level resulting from GCC.		
4.4: LAND USE AND PLANNING		
Threshold 4.4.2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? **Less than Significant Impact.** **California Coastal Act.** In accordance with Chapter 3 of the California Coastal Act (CCA), the proposed project aims to protect, maintain, and enhance the overall quality of the California Coastal Zone by preserving existing natural resources within the Coastal Zone. The proposed project allows a balance between orderly, new development and conservation. Specifically, Strategy No. 19 in the LUE aims to protect and preserve water bodies, and LU Policies 19-1 through LU 19-5 aim to protect and preserve marine resources and the coastal environment. The proposed project also includes a number of other goals, policies, and strategies aimed at achieving compliance with goals outlined in Chapter 3 of the CCA, including those focused on maintaining public to the coast and encouraging coastal-dependent and water-related uses. Therefore, the proposed project would be consistent with applicable goals and policies outlined in the CCA. Impacts would be considered less than significant, and no mitigation would be required. **Local Coastal Program:** The proposed LUE would re-designate land uses within the City's Coastal Zone with the proposed	**Project Design Feature 4.4.1:** To ensure that the proposed project complies with and would not conflict with or impede the City of Long Beach (City) Zoning Code, the project shall implement a Zone Change Program and Local Coastal Program (LCP) update to ensure that changes facilitated by the adopted Land Use Element (LUE) are consistent with the Zoning Code and LCP. The Zone Change Program and LCP update shall be implemented to the satisfaction of the City Director of Development Services, or designee, and shall include the following specific performance criteria to be implemented within 5 years from the date of project approval: • **Year 1:** Within the first 12 months following project approval, all Land Use Element/Zoning Code/LCP inconsistencies shall be identified and mapped. The City shall evaluate these inconsistencies and prioritize areas needing intervention. • **Year 2:** Following the identification and mapping of any zoning and LCP inconsistencies, the City shall, within 24 months following project approval, begin processing zone changes, zone text	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Downtown, Waterfront, Neighborhood-Serving Center or Corridor, Open Space, Founding and Contemporary Neighborhood, and Multi-Family Residential-Moderate PlaceTypes. Because the proposed project would result in updates to the City's General Plan that would be inconsistent with portions of the City's existing Local Coastal Program (LCP), project implementation could result in potential land use conflicts with the LCP. Therefore, updates/amendments to the City's LCP could be required at the time individual applications for development within the City's Coastal Zone are proposed, if they were determined by the City to be inconsistent with the adopted General Plan LUE. All environmentally sensitive habitat areas (ESHA) within the Coastal Zone will remain protected following project implementation. The ESHA map for the City will not change, and future LCP amendments will be further refined at the time individual applications for development within the City's Coastal Zone are proposed. In addition, the proposed project includes Project Design Feature 4.4.1, which mandates a Zone Change Program and LCP update to ensure that changes facilitated by the adopted LUE are consistent with the Zoning Code and LCP. Approval of these future LCP amendments would reduce potential inconsistencies with the City's LCP to a less than significant level. No mitigation would be required. **SCAG 2008 RCP.** The 2008 Regional Comprehensive Plan (RCP) aims to balance growth with conservation by focusing growth in existing centers and along major transportation corridors, encouraging mixed-use development, providing new housing opportunities, encouraging development near transportation stations to reduce congestion and air pollutants, preserving single-family neighborhoods, and protecting open space areas from development.	amendments, and LCP updates in batches, as required to ensure that the Zoning Code and LCP are consistent with the adopted LUE. • **Year 3:** The City shall, within 36 months following project approval, begin drafting new zones, or begin preparation of a comprehensive Zoning Code and LCP update, to better reflect the PlaceTypes identified in the adopted LUE. • **Year 5:** All zoning and LCP inconsistencies shall be resolved through mapping and text amendments by the end of the fifth year following project approval. The City shall also submit the updated LCP to the California Coastal Commission (CCC) for consideration and approval by the end of the fifth year following project approval.	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
The proposed project would adopt PlaceTypes, which would emphasize flexible land use patterns and would allow for a mix of compatible uses in areas throughout the City. Specifically, the Transit-Oriented Development PlaceType would encourage mixed-use development near transit-rich areas, which would serve to reduce congestion and associated air pollutants. The project would also allow for residential uses within the Founding and Contemporary Neighborhood, Multi-Family, Neighborhood-Serving Centers and Corridors, Transit-Oriented Development, Downtown, and Waterfront PlaceTypes, which would be consistent with the 2008 RCP's goals to preserve existing single-family neighborhoods while also providing additional housing opportunities in denser areas of the City. The project would also establish the Open Space PlaceType, which is intended to protect existing open space uses and environmentally sensitive areas in the City. Therefore, the proposed project would be consistent with the 2008 RCP's goals to preserve existing single-family neighborhoods and protect open space and areas from development. For the reasons stated above, the proposed project would be consistent with applicable goals outlined in the 2008 RCP. Impacts would be considered less than significant, and no mitigation would be required. **SCAG RTP/SCS Consistency.** The RTP/SCS provides a comprehensive outline for transportation investments throughout the SCAG region. The RTP/SCS includes goals to protect the environment and health of its residents by improving air quality and encouraging active transportation, provide new housing opportunities, and enable businesses to be profitable and competitive. The proposed project would establish the Transit-Oriented Development-Low and Moderate PlaceTypes, which would promote mixed-use development adjacent to stations along existing bus routes and along the		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Metro Blue Line route. The project would also allow for mixed-use development in most of the proposed PlaceTypes and would focus on creating walkable, pedestrian-friendly neighborhoods that would reduce automobile dependence and improve the transportation network. Therefore, the proposed project would be consistent with the RTP/SCS goal to protect the environment and health of its residents by improving air quality and encouraging active transportation. The proposed project would also promote a variety of housing types by allowing for varying building densities within the proposed PlaceTypes. Therefore, the proposed project would be consistent with the RTP/SCS's goals of providing new housing opportunities. In addition, the project would promote a diverse economy by allowing for a variety of businesses within many of the proposed PlaceTypes and would preserve the natural environment through the establishment of the Open Space PlaceType. The project would also establish the Regional-Serving Facilities PlaceType, which would allow for the operation of existing regional-serving facilities in the City, such as the Port of Long Beach, California State University Long Beach, and the Long Beach Airport. The proposed project would be consistent with the 2016–2040 RTP. Impacts would be considered less than significant, and no mitigation would be required. **General Plan, Specific Plan, Paleontological Mitigation Plan (PMP), and Airport Land Use Plan (ALUP) Consistency:** As part of the proposed LUE, the 14 PlaceTypes would replace the existing land use designations. Although the proposed PlaceTypes are currently inconsistent with the existing General Plan land use designations, approval of the proposed project would result in the project being consistent with the General		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Plan and would ensure the proposed LUE would be the presiding policy document guiding land use in the City. The goals and policies in the General Plan would be updated and replaced by the goals, strategies, policies, and implementation strategies outlined in the proposed LUE and UDE. The proposed PlaceTypes would be consistent with adopted specific plans currently regulating development in the City. For example, the land use plan incorporates the Southeast Area Specific Plan (SEASP) into the Regional-Serving Facility and Open Space PlaceTypes, the Downtown Plan into the Downtown PlaceType, and the Midtown Specific Plan in the Transit-Oriented Development PlaceType. The proposed project also incorporates the PMP into the Regional-Servicing Facility PlaceType. Similarly, the proposed project would allow for development within adopted airport land use plans to continue to be regulated by such plans. The proposed project, once approved, would therefore be consistent with adopted land use plans. Impacts would be considered less than significant, and no mitigation would be required. **City Zoning Code:** The proposed LUE would allow for increased densities, intensities, and heights throughout the City as compared to the existing General Plan and Zoning Code. While the PlaceTypes included as part of the project would be inconsistent with some current zoning districts and regulations outlined in the City's existing Zoning Code and corresponding Zoning Map, the project includes Project Design Feature 4.4.1 to address such inconsistencies. Additionally, the proposed UDE would also establish goals, policies, and implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. Therefore, with incorporation of Project Design Feature 4.4.1, the proposed project would be consistent with the City's Zoning Code and Zoning Map.		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Cumulative Land Use and Planning Impacts. **Less than Significant Impact.** The cumulative impact area for land use for the proposed project is the City of Long Beach. Given that the proposed project encompasses a comprehensive update to the City's existing General Plan LUE and the adoption of a new UDE, the project itself would shape growth in the City through the horizon year 2040 and is therefore cumulative in nature. As such, each new development project facilitated by project approval and subject to discretionary review would be subject to its own General Plan consistency analysis and would be reviewed for consistency with adopted land use plans and policies. Approval of the proposed project would ensure that the proposed LUE would become the guiding land use document for the City, thereby mitigating any potential inconsistencies with the City's General Plan and other applicable land use documents (i.e., the California Coastal Act, the City's LCP, and SCAG's RCP and RTP/SCS). The project would also address potential inconsistencies with the City's Zoning Ordinance and Zoning Map within the first 5 years following project approval (as outlined in Project Design Feature 4.4.1), which would reduce cumulative project impacts related to potential zoning inconsistencies to a less than significant level. No mitigation would be required.	No mitigation is required.	Less than Significant
4.5: NOISE		
Threshold 4.5.1: Would the project 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? **Significant Unavoidable Impact.**	**MM NOI-1** Project contractors shall implement the following construction best management practices during construction of activities: • Schedule high-noise and vibration-producing activities to a shorter window of time during the day outside early morning hours to	Short-Term Construction-Related Noise: Significant and Unavoidable Long-Term Stationary-Source Noise Impacts and Long Term Traffic Noise Impacts: Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Short-Term Construction-Related Noise Impacts. Two types of short-term noise impacts could occur during construction of potential development allowed by the LUE. First, construction crew commutes and the transport of construction equipment and materials to the site for future projects would incrementally increase noise levels on access roads leading to the sites. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance, the effect on longer-term (hourly or daily) ambient noise levels would be small. The second type of short-term noise impact is related to noise generated during demolition, site preparation, excavation, grading, and building erection on the future project sites. The maximum noise level generated by a typical loud piece of construction equipment (e.g., a scraper) on future project sites would be approximately 87 A-weighted decibels (dBA) maximum instantaneous noise level (L_{max}) at 50 ft from the piece of equipment. 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 91 dBA L_{max} at a distance of 50 ft from the active construction area. 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 (e.g., pile driving, nighttime construction work, or 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 BMPS to reduce potential	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 permit issued by the Noise Control Officer. • All residential units located within 500 feet of a construction site shall be sent a notice	

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Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
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, this impact is considered significant and unavoidable. **Less than Significant Impact.** **Long-Term Stationary-Source Noise Impacts.** 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. However, noise generation would continue to be limited by the Noise Ordinance of the City's Municipal Code (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 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. Several of the LUE and UDE policies require new development projects to incorporate site planning and project design strategies to separate or buffer neighborhoods from incompatible activities or land uses. Specifically Policy UD 26-2 requires new development projects to incorporate site planning and project design strategies to separate or buffer neighborhoods from incompatible activities or land uses and LU Policy 16-8 requires that all new developments in areas with noise levels greater than 60 dBA CNEL prepare an acoustical analysis. LU Policy 16-8 also requires new residential land uses	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 Leq at nearby sensitive receptors, temporary noise control blanket barriers shall be installed in a manner to shield sensitive receptors land uses.	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
to be designed to maintain a standard of 45 dBA Ldn or less in building interiors. Any new noise-generating sources would also be subject to compliance with Chapter 8.80, Noise, of the City's Municipal Code, which sets exterior noise standards for the various land uses within the City. Therefore, implementation of the project would not expose persons to noise levels in excess of the City's Municipal Code, and no mitigation measures are required. **Long-Term Traffic Noise Impacts.** Potential sources of permanent increase in ambient noise include noise resulting from the project-related increase in traffic on roadways in the planning area. Based on traffic volumes outlined in the *Traffic Impact Analysis* (TIA) (LSA 2019) for the proposed project, it was determined that the project-related increase in traffic noise would approach 2.1 dBA for all segments, which is considered less than the threshold of perceptibility for humans (i.e., 3 dBA). Therefore, the implementation of the proposed project is not expected to result in the generation of substantial traffic noise increases, and no mitigation would be required.		
Threshold 4.5.2: Would the project generate excessive ground-borne vibration or ground-borne noise levels? **Less than Significant Impact With Mitigation.** 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 proposed project 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	Refer to Mitigation Measure MM NOI-1, above.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
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 related to the exposure of sensitive receptors to excessive ground-borne vibration or noise levels. As discussed above, implementation of the proposed project would include policies and strategies that protect sensitive receptors from vibration in excess of acceptable levels. Therefore, with implementation of Mitigation Measure MM NOI-1, the proposed project would result in less than significant impacts related to the exposure of persons to excessive ground-borne vibration and/or ground-borne noise levels.		
Threshold 4.5.3: 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, would the project expose people residing or working in the project area to excessive noise levels? **No Impact.** Aircraft noise in the City 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. 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 proposed project would not result in the	No mitigation is required.	No Impact

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
exposure of sensitive receptors to excessive noise levels from aircraft noise sources, no mitigation would be required.		
Cumulative Noise Impacts. **Less than Significant Impact.** **Cumulative Stationary-Source Noise Impacts and Long-Term Traffic Noise Impacts.** The proposed project would not create a cumulatively considerable contribution to regional noise conditions. Implementation of the proposed project would not result in a 3 dBA increase in traffic noise levels in the City and would not generate a significant impact under cumulative 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 future individual development proposals. Therefore, implementation of the proposed project would result in a less than significant cumulative impact under long-term cumulative noise conditions, and no mitigation would be required. **Significant and Unavoidable.** **Construction-Related Noise Impacts**. Construction activities associated with development anticipated 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. Although Mitigation Measure MM NOI-1 would reduce construction noise associated with future projects, since the location, the proximity to sensitive receptors, and the types of construction equipment associated with new construction projects are all unknown at this time, in an	Refer to Mitigation Measure MM NOI-1, above.	Cumulative Stationary-Source Noise Impacts and Long-Term Traffic Noise Impacts: Less than Significant Cumulative Construction-Related Noise: Significant and Unavoidable

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
abundance of caution, cumulative construction noise impacts would have a significant and unavoidable cumulative contribution to the total noise environment in the City.		
4.6: POPULATION AND HOUSING		
Threshold 4.6.1: Would the project induce substantial unplanned 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)? **Less than Significant Impact.** A project could indirectly induce growth by reducing or removing barriers to growth or by creating a condition that attracts additional population or new economic activity. Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Significant growth impacts could also occur if the project provides infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public utilities, or if it can be demonstrated that the potential growth significantly affects the environment in some other way. The proposed project would allow for an increase in population, employment, and housing in the City of Long Beach through the horizon year 2040. With the exception of housing, this increase would be consistent with SCAG's regional growth forecasts for each of these areas for the same horizon year. However, much of the housing unit increase is expected to accommodate existing residents due to a combination of aging in place and overcrowded housing conditions, as identified in the City's AFH	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
report. Therefore, the project's growth-inducing potential would be less than significant, as it would not foster growth in excess of what is already anticipated in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Further, because the proposed project would facilitate an increase in non-residential uses, the proposed project is anticipated to meet any increased demands for additional goods and services associated with the projected increase in population. In addition, improvements to public utilities, including new water, sanitary sewer, and storm water services would be identified on a project-specific basis as new developments are proposed. Infrastructure improvements associated with future development facilitated by project approval would be sized appropriately for each project and would not be oversized to serve additional growth beyond that envisioned under the proposed LUE. Therefore, the proposed project would result in less than significant impacts with respect to the inducement of substantial unplanned population growth in an area. No mitigation would be required.		
Cumulative Population and Housing Impacts. **Less than Significant Impact.** The City's population and employment are anticipated to increase by 18,230 persons and 28,511 jobs by 2040. Project-related increases in population and employment have been accounted for in SCAG's growth projections for the City. As demonstrated by growth projections outlined in SCAG's 2016–2040 RTP, demographic growth is anticipated to occur in the planning area regardless of the proposed LUE; however, the proposed LUE would affect the distribution of projected demographic growth. Therefore, the proposed project would not result in cumulative population or employment increases that would exceed projected regional forecasts for the City.	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Approval of the proposed project would allow for the future development of a variety of uses that would serve to provide a sound and diversified economic base and ample employment opportunities for the citizens of Long Beach. Furthermore, the proposed project will serve an existing demand for employment, while also meeting the cumulative demand of employment that will result from the City's projected future population. With the exception of housing, project-related increases in population and employment would be within the total projected growth forecasts for 2040 established in the Final 2016–2040 RTP. The increase in housing above what is projected in the 2016–2040 is required to alleviate existing overcrowding conditions as identified in the AFH, as well as meet the City's affordable housing requirements under the Regional Housing Needs Assessment (RHNA). As such, housing growth envisioned under the proposed project would not significantly induce growth within the planning area. In addition, implementation of the proposed project would be consistent with the City's vision for the community and State housing requirements. Therefore, implementation of the proposed project would not result in a cumulatively significant population or housing impact and the future development facilitated by project approval would not significantly induce growth in areas where growth was not previously anticipated. No mitigation would be required.		
4.7: PUBLIC SERVICES		
Threshold 4.7.1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *fire protection*?	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Less than Significant Impact. As a result of increased growth accommodated by the proposed project, overall demands for fire protection services and emergency services in the City would increase. Consequently, additional Long Beach Fire Department (LBFD) resources (including staffing) would be required to provide fire protection for new residents, workers, and structures. The City's costs to maintain facilities and equipment as well as train and equip personnel would also increase. The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development. Future projects would be reviewed by the City on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted police facilities impact fees. The LBFD would also continue to be supported by Proposition H revenue; the City's General Funds; the City's Tidelands operation revenue; and other revenue sources. Therefore, sufficient revenue would be available for necessary improvements to provide for adequate fire facilities, equipment, and personnel upon the anticipated General Plan build out. Additionally, the proposed PlaceType designations would permit the future development and operation of new stations within these PlaceTypes. The proposed project permits development of new stations, proposes no physical improvements, and requires all future projects to assess project impacts on fire protection services. Therefore, impacts are considered less than significant, and no mitigation is required.		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Threshold 4.7.2: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *police protection?* **Less than Significant Impact.** The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the typical range of police service calls within the City. New and/or additional police resources would be needed to prevent an impact to service ratios as a result of future growth accommodated by the project. The City's costs to maintain facilities and equipment as well as train and equip personnel would also increase. The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development. Future projects would be reviewed by the City on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted police facilities impact fees. Additional police personnel and resources would be provided through the annual budget review process. Furthermore, the Long Beach Police Department (LBPD) would continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's Tidelands operation revenue; and other revenue sources. By following this process, sufficient revenue would be available for necessary service improvements to provide for adequate police facilities, equipment, and personnel under the anticipated General Plan build out. Therefore, impacts are considered less than significant, and no mitigation is required.	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Threshold 4.7.3: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 public schools? **Less than Significant Impact.** Implementation of the proposed project would allow for the future development of up to 28,524 dwelling units by 2040, which would result in the generation of additional school-age children within the Long Beach Unified School District (LBUSD) service area. Of the 28,524 units, the City has identified a need for 21,476 housing units to address existing housing needs attributed to overcrowding. As such, the majority of the 28,524 anticipated new housing units would serve to relieve overcrowding of existing households in the City, so those families are already being served by LBUSD. Still, this potential future growth could strain existing and/or planned school facilities. Based on student generation factors and projected growth in the City, it was determined that the anticipated General Plan build out would result in an increase in 5,272 students. With the anticipated General Plan build out, elementary and middle school enrollment in LBUSD would be within the 2017–2018 LBUSD facilities capacity, but the total estimated enrollment for high schools in 2040 could exceed the LBUSD current facilities' capacity. All future development projects in the City would be required to pay school developer fees to LBUSD for the operation, maintenance, and development of schools to accommodate future student enrollment. If student growth generated by the anticipated General Plan build out exceeds the estimates identified above, the acquisition, modernization, or modification of school sites to accommodate additional facilities	No mitigation is required.	Less than Significant Impact

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
could be required. Additional school resources would also continue to be funded by an increase in tax revenue as a result of future growth. In addition, new housing units would be built over the course of 21 years, during which enrollment rates would likely fluctuate. Therefore, impacts of the proposed project related to student generation and the potential need for additional school facilities would be less than significant, and no mitigation would be required.		
Threshold 4.7.5: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 other public facilities? **Public Library.** **Less than Significant Impact.** The proposed project does not include any physical improvements but would allow for new PlaceTypes that would facilitate an increase in housing units in the City and could increase the demand for library facilities. Demand for library services is typically determined based on the size of the resident population. The City has not formally adopted a service standard of library space per capita, but the City did establish a target of 0.45 square feet (sf) per capita in its budget for Fiscal Year 2007. Using this standard and the estimated future population of approximately 484,485, the Long Beach Public Library System (LBPL) would need to contain a total of 218,019[1] sf to meet this target. In total, the existing LBPL system has approximately 237,695 sf of library facilities, which is greater than the City's threshold for providing library	No mitigation is required.	Less than Significant

[1] 0.45 square feet per the City's population of 484,485 in 2040.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
services for both the existing population and the projected demand generated by the anticipated build out of the General Plan. In addition, technology continues to evolve as does resident demand for library services and resources. With the increased demand for electronic resources, it may be valuable to measure library services by more than a square footage per capita benchmark. For example, the City is replacing the Main Library with a new library at the City's Civic Center. Although this library is smaller in square footage than the original library, the new library makes more efficient use of its space. It also contains more electronic resources and requires less space to accommodate hardcopy library materials. Therefore, the loss of library square footage is not considered a loss of library volumes or available resources to serve the existing and projected population in the City. It is anticipated that the demand for electronic materials will continue to increase, potentially reducing the amount of square footage to service library patrons. The proposed project's increase in demand on library services can be served by the existing facilities and would not adversely affect library services in the project area. As such, the proposed project would have less than significant impacts related to public libraries, and no mitigation would be required.		
Cumulative Public Service Impacts. **Less than Significant Impact.** **Fire Protection.** The proposed project would contribute to cumulative local and regional demand for fire services. Each future project requiring a discretionary action within the City would be evaluated individually, and project-specific mitigation would be proposed as needed. The costs of additional LBFD resources are anticipated to be offset through increased revenues and fees, such as property taxes and Fire Facilities Impact Fees, generated by future development. The City is	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
almost entirely built out, with most new development occurring as in-fill projects. The LBFD anticipates cumulative demand in order to plan for overall service. This cumulative demand is anticipated to be met through project implementation as the LUE establishes the development of future fire stations. Furthermore, through implementation of the proposed project, the City will reduce the potential for dangerous fires by concentrating development within urban areas where there is a low fire risk and by requiring that future projects, including those that would replace older outdated buildings, comply with applicable City and State regulations related to fire. Therefore, the proposed project's contribution to fire protection impacts would not be cumulatively considerable, and no mitigation would be required. **Police Protection.** The City is almost entirely built out, with most new development occurring as in-fill projects. The cumulative demand for police protection services is anticipated to be met through project implementation, as the LUE establishes the development of future police stations. In addition, the need for additional law enforcement associated with cumulative growth would be addressed through the annual budgeting process when budget adjustments would be made in an effort to meet changes in service demand. Police facility impact fees would also be required for new residential and nonresidential development to offset additional costs of new development. Therefore, the proposed project's contribution to police protection impacts would not be cumulatively considerable, and no mitigation would be required. **Public Schools.** The proposed project would generate approximately 5,272 school-aged children, which would lead to an increased demand on existing educational school facilities. Future projects consistent with the LUE would be accounted for on a project-by-project basis. Residential projects located within		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
the LBUSD service area, but outside the City, would have the potential to generate school-aged children, and, as a result, increase demand on educational school facilities. LBUSD would assess developer fees to future projects within its service area in an effort to fund future schools needed to meet the project-related increase in school-aged children. Therefore, the proposed project would not contribute to any cumulative school impacts, and no mitigation is required. **Public Libraries.** The City currently meets the LBPL system's square footage requirements, and the proposed project would not exceed the LBPL system's ability to meet the anticipated General Plan build out for library services. Further, the City has replaced older less-efficient library buildings with newer facilities with more electronic resources and library materials. As the demand for electronic resources continues to increase, less square footage is required for library facilities. Therefore, the proposed project's contribution to library impacts would not be cumulatively considerable, and no mitigation is required.		
4.8: TRANSPORTATION		
Threshold 4.8.1: Would the project conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? **Significant and Unavoidable.** ***Arterial Intersections.*** 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 established in the 2016–2040 RTP/SCS, demographic trends for the planning area (e.g., population and employment growth) are forecast to occur whether or not the proposed LUE/UDE 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,	**MM T-1** Prior to approval of any discretionary 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	Arterial Intersections, Congestion Management Program Intersections, Caltrans Ramp Intersections, and Caltrans Arterial and Freeway Facilities: Significant and Unavoidable Congestion Management Program Transit: Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
however, the TIA for the proposed project compared traffic conditions in the future associated with the anticipated General Plan Build Out (2040) scenario with existing conditions (2018). Results of this analysis indicated that traffic growth associated with the anticipated General Plan Build Out would result in significant impacts at 48 of the 120 intersections included in the study area (40 percent). In order to provide an expanded comparison of the effects of the increased housing and locational change of land use concentration in the proposed project, the TIA also compared the results of the General Plan Build Out (2040) No Project and the anticipated General Plan Build Out (2040) With the Project scenarios. Results of this analysis showed that when compared to the previous plan, the project would result in some intersections operating better and some intersections operating poorer due to the redistribution of land uses. ***Congestion Management Program Intersections.*** The Los Angeles County Congestion Management Plan (CMP) monitors 10 intersections within the City of Long Beach. Based on the analysis presented in the TIA, future traffic growth and traffic growth associated with the proposed project are anticipated to result in level of service (LOS) F conditions (with a 0.02 or greater increase in volume-to-capacity [v/c]) at 4 of the 10 CMP intersections in Long Beach and would, therefore, have a significant impact. **Less than Significant Impact.** ***Congestion Management Program Transit.*** Long Beach is served by a robust transit network. The proposed project increases density of land uses adjacent to transit corridors to leverage the existing transit infrastructure and potentially reduce VMT and greenhouse gas emissions.	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	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
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 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 mile 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 Build Out (2040) With Proposed Land Use Plan 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 Long Beach Transit (LBT), and other transit operators in Long Beach. On average, each route would	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.	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
experience an increase of approximately 50 riders during the peak hours, which is unlikely to create an impact to the existing and future transit service. **Significant and Unavoidable.** ***Caltrans Ramp Intersections.*** Based on the analysis in the TIA, 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 project. Two additional intersections function at LOS E or better in existing conditions, but would function at LOS F in the future regardless of the project. 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 ***Caltrans Arterial and Freeway Facilities.*** The TIA analyzed freeway facilities including mainline segments, merging segments, and diverge segments. Many of these facilities were found to function beyond their designed LOS in existing conditions. The project would contribute additional traffic		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
volume, which would constitute a significant impact according to the established criteria. On- and off-ramps in the study area were found to meet the design guidelines. The TIA analyzed arterials that are on the State Highway System. The performance of these roadways was found to meet LOS standards meaning that vehicle delay on these facilities is a result of intersection performance. ***Potential Physical Improvements.*** The TIA 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. The TIA considered the physical improvements necessary for impacted intersections to function at LOS D with projected future traffic volumes. The 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. Physical improvements outside of existing rights-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 rights-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 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
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, analysis of freeway mainline segments show that up to 6 additional travel lanes might be necessary on freeways that are from 6–10 lanes wide currently. 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 v/c 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. However, the effect of these measures 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. Therefore, Mitigation Measure MM T-1 is recommended to reduce the level of traffic impacts. Mitigation Measure MM T-1 would require consideration of feasible traffic improvements at the time individual projects are		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
proposed. If individual projects contribute to transportation impacts for which physical improvement is feasible, then physical improvements would be implemented and transportation impacts would be reduced. However, if feasible physical improvements are not feasible, then transportation impacts would remain significant. Therefore, implementation of the project would result in a significant and unavoidable impact related to a program, plan, ordinance, or policy.		
Threshold 4.8.2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)? **Less than Significant Impact.** The 2016 SCAG RTP/SCS provided calculations of VMT derived from the Regional Travel Demand Model. 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. VMT per capita in Long Beach is lower in the existing condition than the region as a whole or in Los Angeles County. With implementation of the 2016 RTP/SCS, VMT per capita in Long Beach is anticipated to still be lower than the region as a whole or in Los Angeles County. 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 would be reduced from 9,482,252 per day in the existing condition to 9,028,327 with the proposed project (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). Land use changes proposed in the LUE/UDE 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 LUE/UDE as compared to the existing LUE. These off-peak VMT are	No mitigation is required.	Less than Significant Impact.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
generated by discretionary trips associated with the number of households in the City. Because the project 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, compared to the no project scenario. 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 project. The efficiency of the distribution of land uses in the LUE/UDE would reduce this 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 increases the number of housing units to reduce overcrowding in Long Beach. The efficiency of the location of land uses in the project (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 project, VMT per capita in Long Beach remains lower than the region as a whole and lower than Los Angeles County. Because the measures of VMT in absolute terms and per capita decrease from existing conditions with the project and the measure of VMT per household decreases from existing conditions and from the current LUE, it is determined that the project would have a less than significant impact related to *State CEQA Guidelines* Section 15064.3 subdivision (b). No mitigation is required.		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Cumulative Transportation Impacts. **Significant and Unavoidable Impact.** The project proposes an update to the City's General Plan that would affect development patterns throughout the City. As such, because the proposed project is a citywide policy action that would facilitate future development throughout the entire City, the proposed project itself is cumulative in nature. Under the anticipated General Plan (2040) build out scenario, the project would result in 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. Potential physical improvements at each impacted location was considered against potential constraints, such as the intersection being located outside of the City's jurisdiction, which eliminates the City's authority to compel physical improvements or physical improvements being located outside of the existing right-of-way, which could be infeasible or result in increased environmental impacts. Furthermore, the effect of the Implementation Measures in the Mobility Element in reducing traffic volume cannot be guaranteed to reduce impacts. Because measures to increase vehicle capacity or reduce vehicle volume cannot be guaranteed and may not be feasible, the impacts identified above are considered cumulatively significant and unavoidable for the horizon year of 2040.	Refer to Mitigation Measure MM T-1, above.	Significant and Unavoidable.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
4.9: UTILITIES		
Threshold 4.9.1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? **OR** **Threshold 4.9.2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?** **Less Than Significant Impact.** Although the proposed project does not include any physical improvements or development, future development projects facilitated by the proposed project's approval would result in an increased water demand. The project-related increase in water demand in 2040 would be 59,105 acre-feet, or less than one percent of the Long Beach Water Department's (LBWD) total projected water supply for the horizon year 2040. As such, water supplies will be sufficient to meet all demands through the horizon year 2040 during normal, single dry year, and multiple dry year hydrologic conditions. It should also be noted that the project-related increase in demand for water may not directly correlate with the increase in housing units since the majority of anticipated new units is needed to alleviate overcrowding of existing residences that are already using water. The proposed project would comply with water conservation measures, including pertinent provisions of CALGreen Code building efficiency standards (Title 24, Part 11) regarding the use of water-efficient fixtures. Policies and programs outlined in	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
the 2015 Urban Water Management Plan (UWMP) and the proposed LUE would reduce water consumption and wastewater flow during operation, which will decrease the overall burden on existing water facilities and decrease the number of facilities that would need to be constructed or expanded. Additionally, under AB 610, a Water Supply Assessment (WSA) would be required for certain projects. Individual projects occurring under the proposed project would be required to prepare a WSA if they meet any of the requirements under AB 610. Because future development that may occur with implementation of the proposed project has been determined to be consistent with water demands in the 2015 UWMP and because the LBWD has identified a surplus water supply to serve the projected water demands through the horizon year 2040, the future project-related demand for water would be consistent with the City's UWMP. Therefore, the proposed project would not result in the need for additional water infrastructure that would result in a significant impact. Impacts are considered less than significant, and no mitigation would be required.		
Threshold 4.9.1: Would the project require or result in the relocation or construction of new or expanded water, *wastewater* treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? **OR** **Threshold 4.9.3: Would the project 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 commitment**	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Less Than Significant Impact. Short-term demand for wastewater treatment services may occur during construction activities associated with future projects facilitated by approval of the proposed project. Sanitary services during construction of future projects would likely be provided by portable toilet facilities, which would transport waste off site for treatment and disposal. The demand for wastewater treatment services during construction would be temporary and would generate minimal wastewater compared to the demand for wastewater treatment services associated with the anticipated General Plan build out scenario. Therefore, construction activities are expected to result in less than significant impacts on the wastewater treatment and collection system, and no mitigation would be required. Following the anticipated General Plan build out, the estimated wastewater flow would be approximately 43 million gallons per day (mgd), which would represent approximately 4 percent of the remaining capacity of existing County Sanitation Districts of Los Angeles County (LACSD) facilities. This projection is anticipated to be conservative and representative of a "worst-case scenario" because the majority of new housing units to be developed as part of the project are required to alleviate overcrowding of existing housing units with current Long Beach residents who are already generating wastewater. In addition, new units are likely to use significantly less water and thereby generate less wastewater due to building codes requiring reduced water consumption and reduced landscaping associated with proposed multi-family residential units, which account for the majority of new residential development under the proposed project. Therefore, the projected future increase in wastewater flows associated with development that may occur with implementation of the proposed project would not exceed the treatment requirements of the Regional Water		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Quality Control Board (RWQCB) for the Joint Water Pollution Control Plant (JWPCP) and the Long Beach Water Reclamation Plant (WRP) of the LACSD. Future development projects facilitated by project approval would be reviewed by the City on a project-by-project basis and would be required to comply with any requirements in effect when the review is conducted, including sewer capacity considerations as part of the City development review and approval process. Improvements and upgrades to sewer lines would continue to be prioritized based on need and would occur throughout the planning period. Project impacts related to wastewater treatment would be less than significant. In addition, project implementation would not necessitate the construction of wastewater supply or conveyance facilities. No mitigation would be required.		
Threshold 4.9.1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or *storm water drainage*, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? **Less than Significant Impact.** Future development facilitated by the proposed project would be required to comply with the provisions of the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), or any other subsequent applicable permits. The Construction General Permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) to identify construction BMPs in order to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, spills, and increased runoff. Furthermore, as future individual projects are proposed, the	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
City would review grading plans and construction documents to identify project features aimed at reducing construction impacts to storm drain facilities. Where necessary, the City would identify project conditions to ensure the adequate capacity and operation of the storm drain system during construction activities. Therefore, construction activities associated with implementation of the project would not require or result in the relocation or construction of new stormwater drainage systems, where the construction of which would cause significant environmental impacts. Development of future projects could increase impervious surface area, which could reduce infiltration and increase runoff. Future projects would be reviewed on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted, including payment of Development Fees to fund future improvements to the City's stormwater infrastructure. Such improvements are outlined in the City's 2019 Capital Improvement Program and include upgrades related to storm drain pipelines, pump stations, and stormwater monitoring equipment. Depending on the size and nature of the projects, a Water Quality Management Plan (WQMP) would be developed to address post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects. Future projects would also be required to comply with goals and policies outlined in the proposed LUE that are aimed at reducing stormwater runoff and mitigating off-site impacts related to pollutants entering natural water bodies. Therefore, the proposed project would result in less than significant impacts related to the construction or expansion of stormwater drainage facilities, and no mitigation would be required.		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Threshold 4.9.1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or *telecommunications facilities*, the construction or relocation of which could cause significant environmental effects? **Less than Significant Impact.** Construction activities associated with future projects would not increase the demand for telecommunications facilities, and thus would not require or result in the construction of new or the relocation of existing telecommunication facilities. However, future development facilitated by the proposed project could result in the need for new or relocated telecommunications facilities. Similar to existing market conditions, Spectrum Communications, Frontier Communications, and AT&T U-Verse would extend existing services to meet the increased demand for telephone, internet, and cable services as future developments are proposed. Where necessary, infrastructure improvements would be made to existing telecommunications facilities in order to meet customer demands. Environmental impacts associated with future improvements to telecommunications facilities are anticipated to be minimal, as these facility areas would have previously been disturbed through association with past infrastructure improvements. In addition, any major improvements to telecommunications facilities would be reviewed on a project-by-project basis, and would comply with any applicable regulations in place at the time such development is proposed. Therefore, implementation of the proposed project would result in less than significant impacts related to the construction or relocation of existing telecommunications facilities, and no mitigation would be required.	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Threshold 4.9.4: Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? **Less than Significant Impact.** Construction of future projects facilitated by the proposed project would generate demolition waste. Construction waste would be recycled pursuant to Chapter 18.67, Construction and Demolition Recycling Program, of the City's Municipal Code. Under the Municipal Code, projects requiring demolition or building permits are required to divert at least 60 percent of all construction and demolition material from landfills. Therefore, the proposed project would have a less than significant impact related to solid waste generation during construction, and no mitigation measures regarding construction debris are required. Solid waste generated by operations associated with future development under the proposed project would be collected by the City's Environmental Services Bureau and hauled to the Southeast Resource Recovery Facility (SERRF). With the proposed project, the City is forecast to generate approximately 1.62 million pounds of solid waste in 2040, or an increase of approximately 193,744 pounds (lbs) per day. There is sufficient landfill capacity in the region to serve solid waste generated by the proposed project. In addition, all future projects facilitated by the proposed project would be required to comply with federal, State, and local statutes and regulations related to solid waste. Therefore, impacts related to solid waste generation would be less than significant, and no mitigation would be required.	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Cumulative Utility Impacts **Less than Significant Impact.** **Wastewater.** The geographic area for the cumulative analysis for wastewater treatment is defined as the City and LACSD. The future anticipated General Plan build out is not anticipated to generate wastewater above LACSD's current capacity. However, compliance with applicable federal and State regulations along with specific jurisdictional ordinances, as well as further CEQA review for projects requiring discretionary approvals, would reduce cumulative impacts related to potential wastewater treatment violations to a less than significant level. The proposed project would result in a population consistent with the growth projections for the City provided in the SCAG 2016–2040 RTP/SCS. Therefore, the proposed project's contribution to wastewater generation in the LACSD service area would not be cumulatively considerable, and no mitigation is required. **Water.** The geographic area for the cumulative analysis of water infrastructure includes the service territory of the LBWD. According to the City's 2015 UWMP, future water supplies are reliable through the horizon year (2040) of the project. In addition, LBWD projects that there are sufficient groundwater supplies to meet any future demand requirements in the City. Further, the current 2015 UWMP accounts for the proposed project's transition from traditional land uses to PlaceTypes and has demonstrated that the LBWD has the ability to serve the project-related increase in water demand through the horizon year 2040. Therefore, cumulative impacts related to water demand would be less than significant, and no mitigation is required. **Solid Waste.** The geographic area for the cumulative analysis of impacts to solid waste disposal capacity is the County of Los Angeles. Development associated with the proposed project	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
and other past, present, and reasonably foreseeable projects within the County would contribute to an increase in demand for landfill capacity and solid waste services for the County. As stated previously, the SERRF, a refuse-to-energy transformation facility, serves the planning area and does not have a scheduled closure date. It is expected that the SERRF will continue to operate at its current permitted daily capacity through 2027. The SERRF currently does not exceed its daily maximum permitted disposal capacity. Solid waste considered unprocessable by SERRF would be taken to landfills in Orange, San Bernardino, and Riverside Counties. There is currently sufficient permitted capacity within the LACSD system serving Los Angeles County to provide adequate future capacity for the County's solid waste needs**.** Therefore, the proposed project would not have a cumulatively significant impact on waste disposal capacity at LACSD facilities. **Telecommunications.** The geographic area for cumulative analysis of cable, telephone, and internet services consists of the service territory for Spectrum Communications, Frontier Communications, and AT&T U-Verse. These services are not operating above capacity; however, these service providers are anticipated to extend current facilities to meet project service demands on an as-needed basis, as is the case under existing market conditions. Therefore, the proposed project's impacts related to cable, telephone, and internet services would not be cumulatively significant. No mitigation would be required.		
SECTION 4.10: ENERGY		
Threshold 4.10.1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? **Less than Significant Impact.**	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
Electricity. Energy would be consumed throughout construction and operation associated with future projects facilitated through approval of the proposed project. Energy would be required during construction for the transportation of building materials, manufacturing of building materials, and the actual construction of buildings and infrastructure improvements. Energy consumption during operation would be associated with building heating and cooling, use of consumer products, lighting, and vehicular traffic. The projected electricity demand in the City would be 1,950,216,130 kilowatt hours (kWh) in 2040 (approximately 117.18 percent greater than the existing electricity demand). However, many of the land uses as proposed under the project would replace existing uses that already utilize electricity resources. Furthermore, energy efficiency technologies would continue to improve through the life of the project (horizon year 2040). New facilities required to support the project-related demand for electricity would be constructed in accordance with the demand for the new service. Potential environmental impacts would be evaluated on a project-by-project basis. However, because the City is largely built out, it is not anticipated that major new facilities would be necessary to serve new development facilitated by project approval at the horizon year of the General Plan build out (2040). Therefore, impacts are considered less than significant, and no mitigation would be required. **Natural Gas.** Future development occurring under the proposed project would generate a natural gas demand of 4,649,160,730 kBtu, or an approximately 16.34 percent increase in natural gas demand. This analysis assumes the full anticipated General Plan build out, which is a worst-case analysis, since it is unknown how much of the proposed residential and non-residential uses would actually be constructed. In addition, many of the land		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
uses as proposed under the project would replace existing uses that already utilize natural gas resources. Gas service will be added to the existing system operated and maintained by the Long Beach Energy Resources (ER) Department, as necessary, to meet the requirements of individual projects within the City. Because developments that would be considered under the proposed project have not yet been designed or proposed, the specific improvements to existing natural gas facilities that would need to be implemented to serve future developments are unknown at this time, as are the potential environmental impacts of such improvements. Potential environmental impacts would be evaluated on a project-by-project basis. However, because the City is largely built out, it is not anticipated that major improvements would be necessary to serve the City and new development facilitated by the project approval. Therefore, impacts are considered less than significant, and no mitigation would be required. **Gasoline.** From 2018 to 2040, VMT per capita would decrease by approximately 9 percent, from 19.9 in 2018 to 18.2 in 2040, and VMT per household would decrease by 19 percent from 56.9 in 2018 to 46.1 in 2040. The decrease in VMT per capita and per household would likely result in an associated decrease in the demand for gasoline. Moreover, the fuel efficiency of vehicles is expected to continue to increase and improve throughout the life of the project as new fuel economy standards are established. Therefore, implementation of the proposed project would not result in a substantial increase in transportation-related energy uses, such that it would result in a wasteful, inefficient, or unnecessary consumption of energy resources. Impacts are considered less than significant, and no mitigation would be		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
required.		
Threshold 4.10.2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? **Less than Significant Impact.** Future projects facilitated by approval of the proposed project would be required to comply with the CALGreen Code building efficiency standards (Title 24, Part 11) and the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6), which includes provisions related to insulation and design aimed at minimizing energy consumption. Future projects facilitated by project approval would also be required to comply with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at reducing energy consumption in the planning area. These goals, policies, and strategies have been developed in accordance with federal and State energy regulations, such as CALGreen Code building efficiency standards (Title 24, Part 11), the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6),and SB 743, which are also aimed at reducing energy consumption. Therefore, the proposed project would be consistent with applicable plans related to renewable energy and energy efficiency, and no mitigation would be required.	No mitigation is required.	Less than Significant
Cumulative Energy Impacts **Less than Significant Impact.** **Electricity.** The geographic area for the cumulative analysis of impacts to the provision of electricity is the service territory of Southern California Edison (SCE). The anticipated General Plan build out scenario (2040) would represent approximately 1.3 percent of the extrapolated 2040 peak demand. SCE has identified adequate capacity to handle an increase in electrical demand, and any increase in electrical demand resulting from the proposed project would be incremental compared to an	No mitigation is required.	Less than Significant

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
increase in regional electrical demand. Therefore, it is anticipated that the electricity demand under the anticipated General Plan build out scenario (2040) would be within the forecasted electricity demand for the 2040 build out. The proposed project's increased demand for electricity would not be cumulatively considerable, and no mitigation is required. **Natural Gas.** The geographic area for the cumulative analysis of impacts to the provision of natural gas is the service territory for the Energy Resources (ER) Department. The anticipated 2040 natural gas demand would represent 0.05 percent of the ER Department's projected natural gas demand for the year 2040. Moreover, future development under the anticipated General Plan build out scenario (2040) would be subject to Title 24 requirements and would be evaluated on a case-by-case basis to determine the need for specific distribution infrastructure improvements. Where necessary, gas service would be added to the existing system by the ER Department to meet the requirements of individual development projects in the City. Therefore, the proposed project's contribution to cumulative natural gas impacts would be considered less than significant, and no mitigation is required. **Gasoline.** The geographic area for the cumulative analysis of impacts to the provision of natural gas is the State of California, as there is no local or singular provider for gasoline. Although the proposed project would result in an increase in vehicular trips that would result in an increased demand for gasoline, new vehicles traveling within the planning area through 2040 would likely have improved fuel efficiency and would increasingly be comprised of electric, hydrogen, and diesel vehicles (consistent with historic and current trends). In addition, the proposed project would support land use patterns and travel modes that would reduce the number of VMTs traveled within the planning area (a 9 percent decrease from 2018 to 2040), which would		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Compliance Measures, and Levels of Significance

Potential Environmental Impacts	Project Design Features, Mitigation Measures, and Compliance Measures	Levels of Significance After Mitigation
further reduce the project-related transportation energy demand. Furthermore, the project-related demand for gasoline would be minimal compared to the statewide availability of gasoline. Therefore, the proposed project's contribution to cumulative transportation energy impacts would be considered less than cumulatively significant, and no mitigation is required.		

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2.0 INTRODUCTION

2.1 OVERVIEW AND PROJECT BACKGROUND

This Recirculated Draft Environmental Impact Report (EIR) has been prepared to evaluate environmental impacts associated with the proposed General Plan Land Use and Urban Design Elements (proposed project) in the City of Long Beach (City). The City is the "public agency which has the principal responsibility for carrying out or approving the project" and, as such, is the "Lead Agency" for this project under the California Environmental Quality Act of 1970 (CEQA) (*State CEQA Guidelines for Implementation of CEQA* Section 15367). CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action. This Draft EIR is intended to serve as an informational document to be considered by the City and the Responsible Agencies during deliberations on the proposed project. The anticipated project approvals associated with the proposed project are described in Chapter 3.0, Project Description.

Preparation of an Environmental Impact Report (EIR) for the proposed project began in 2015. Prior to preparation of the Draft EIR, the *Initial Study* (LSA Associates, Inc. [LSA], May 2015) (provided in Appendix A of the Draft EIR) determined that the proposed project may have a significant effect on the environment and that an EIR would be required to more fully evaluate potential adverse environmental impacts that may result from development of the proposed project. Consequently, a Draft EIR was prepared and circulated for public review for an extended period of 78 days, 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 (refer to Chapter 3.0, Project Description, for further discussion related to the proposed changes included as part of the project). Refer to Subsections 2.2.3 and 2.2.4 for a description of the Original Draft EIR and a discussion of the basis for recirculating the Draft EIR.

2.2 ENVIRONMENTAL REVIEW PROCESS

The California Environmental Quality Act (CEQA) Public Resources Code (PRC) Section 21000, et seq., requires that a public agency prepare an EIR when the public agency finds substantial evidence that the project may have a significant effect on the environment (PRC Section 21080 (d)). The basic purposes of CEQA are to:

1. Inform governmental decision makers and the public about the potential significant environmental effects of proposed activities;
2. Identify the ways that environmental damage can be avoided or significantly reduced;
3. Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
4. Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

In compliance with the *State CEQA Guidelines,* the City has taken steps to maximize opportunities for the public and other public agencies to participate in the environmental review process. The City conducted the scoping process, issued a Notice of Preparation for the proposed project, and determined that an EIR was required to evaluate the potentially significant environmental effects of the proposed project and related actions. In addition, a public scoping meeting was held, as discussed further below.

2.2.1 Initial Study and Notice of Preparation

The City, as the Lead Agency, originally prepared an Initial Study (IS) and issued a Notice of Preparation (NOP) on an EIR for the original project on May 18, 2015, which was distributed via the State Clearinghouse (SCH). The SCH issued a project number for the EIR (SCH No. 2015051054). The primary purpose of preparing the Initial Study was to scope the environmental analysis and evaluate potential environmental impacts that may result from project approval. The Initial Study was also used to scope out environmental issues that were determined to be "less than significant" or "no impact."

In accordance with the *State CEQA Guidelines,* Section 15082, the NOP was circulated to responsible agencies and individuals for a period of 30 days, during which time written comments were solicited pertaining to environmental issues and topics that the EIR should evaluate.

Responses to the IS/NOP were received from the following agencies:

- California Department of Transportation (Caltrans), District 7
- County of Los Angeles Fire Department
- County Sanitation Districts of Los Angeles County (LACSD)
- South Coast Air Quality Management District (SCAQMD)
- Southern California Association of Governments (SCAG)
- State of California, Governor's Office of Planning and Research (OPR)

The following individuals submitted written comments on the NOP:

- Anne Proffit
- Marilyn Surakus

Key environmental issues and concerns raised in response to the IS/NOP scoping process or at the scoping meeting included:

- **Air Quality:** Concerns were expressed regarding project-related impacts on air quality in the South Coast Air Basin.
- **Land Use and Planning:** Concerns were expressed as to whether or not the full scope of the project was necessary to be consistent with applicable land use documents, including SCAG's Regional Transportation Plan/Sustainable Communities Strategies. Concerns were also expressed regarding the project's inclusion of land use goals and policies and zoning requirements that would allow for flexibility in housing densities and types on residential properties throughout the City.

- **Traffic/Circulation:** Concerns were expressed regarding potential project-related conflicts with applicable traffic plans, ordinances, and/or policies establishing measures of effectiveness for the performance of the circulation system and potential project-related impacts to Caltrans facilities.
- **Utilities:** Concerns were expressed regarding the ability of the City to provide water to accommodate new development allowed under the anticipated General Plan build out scenario (2040).

2.2.2 Scoping Meeting Summary

The City held a public scoping meeting on May 27, 2015, to present the original project and to solicit input from interested individuals regarding environmental issues that should be addressed in the Draft EIR. Key environmental issues and concerns raised in the response to the IS/NOP scoping process or at the scoping meeting included:

- **Aesthetics:** Concerns were expressed that the development of the proposed project would result in significant increases in allowable building heights and density within the Downtown area, thereby resulting in a change to the aesthetic character of this area.
- **Recreation:** Concerns were expressed regarding the potential loss of open space and recreational resources resulting from project implementation.

Please note that these are not exhaustive lists of areas of controversy, but rather key issues that were raised during the scoping process. The 2016 Draft EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures designed to reduce or eliminate potentially significant impacts. Appendix A includes the IS/NOP and copies of written comments received in response to the IS/NOP, as well as written comment cards received in response to the Public Scoping meeting.

2.2.3 Original Draft EIR

Preparation of an EIR for the proposed project began in June 2015. The City determined that the proposed project may have a significant effect on the environment, and a Draft EIR was required to fully evaluate the potential adverse environmental impacts that could result from the proposed project. As previously stated, a Draft EIR was prepared and circulated for public review for an extended period of 78 days (33 days longer than the required 45-day public review period), from September 1, 2016, to November 18, 2016. The NOP, the NOP distribution list, and comment letters are provided in Appendix A.

A total of 108 letters commenting on the proposed project were received during the public review period or immediately thereafter. Comments were received from State and local agencies and organizations, as well as interested individuals. Comments that address environmental issues were responded to thoroughly in the Final EIR for the project, which was released for public review in January 2017.

Due to extensive public input provided to the City in the form of written comments on the Draft EIR, oral testimony at public hearings and community meetings, and direction from the City Council to revise the PlaceTypes Maps in the Land Use Element (LUE), the City subsequently revised the proposed project in March 2018. The project changes were determined to constitute potentially significant new information, thereby requiring recirculation of the Draft EIR pursuant to *State CEQA Guidelines*, Section 15088.5. Changes associated with the revised project are described in further detail in Chapter 3.0, Project Description, of this Recirculated Draft EIR.

2.2.4 Recirculated Draft EIR

As described further in Chapter 3.0, Project Description (refer to Section 3.5.3, Changes from 2016 LUE to 2018 LUE, and Section 3.5.5, Changes from 2016 UDE to 2018 UDE), changes to the project were made in response to public input received on the originally proposed project (refer to Appendix H for the revised LUE and UDE). As such, this Recirculated Draft EIR has been prepared to evaluate the environmental impacts associated with the proposed changes to the project in accordance with CEQA and the *State CEQA Guidelines* (CEQA Guidelines, California Code of Regulations, Title 14, Section 15000, et seq.). This Recirculated Draft EIR also complies with procedures established by the City for the implementation of CEQA.

This Recirculated Draft EIR has been prepared to evaluate environmental impacts that may result from implementation of the revised project. As the Lead Agency, the City has the authority for preparation of this Recirculated Draft EIR and, after the comment/response process, certification of the Final Recirculated EIR and approval of the proposed project as described in this Recirculated Draft EIR.

The City and Responsible Agencies have the authority to make decisions on discretionary actions relating to development of the proposed project. As previously stated, this Recirculated Draft EIR is intended to serve as an informational document to be considered by the City and Responsible Agencies during deliberations on the proposed project. This Recirculated Draft EIR evaluates and mitigates a reasonable worst-case scenario of potential impacts associated with the proposed project, which is programmatic in nature.

2.2.4.1 Type of EIR

This Recirculated Draft EIR will serve as a Program EIR pursuant to the *State CEQA Guidelines*, Section 15168. According to Section 15168 of the *State CEQA Guidelines*, a Program EIR is appropriate for a series of actions that can be characterized as one large project and are related either:

(1) Geographically,

(2) As logical parts in the chain of contemplated actions,

(3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or

(4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The use of a Program EIR provides an occasion for a more exhaustive consideration of effects and alternatives than otherwise would be practical under a Project EIR. However, subsequent activities occurring as a result of program/project approval and certification of a Program EIR must be further evaluated in light of the Program EIR to determine whether or not an additional environmental document must be prepared. If an agency finds that no new effects could occur and that no new mitigation would be required, then the agency can determine that subsequent activities are covered under the Program EIR and no further environmental documentation would be required. Conversely, an agency may determine that future projects could require the preparation of a new Initial Study, Mitigated Negative Declaration, or new EIR. If new environmental documentation is required, a Program EIR can be used to focus the scope of the subsequent environmental document (*State CEQA Guidelines,* Section 15168).

The proposed project includes the adoption of the proposed LUE and Urban Design Element (UDE), which are intended to guide the future development patterns and the aesthetic character of the City through the implementation of goals, policies, and implementation strategies. The proposed project would be implemented over the next 21 years, through the year 2040. This Recirculated Draft EIR has been prepared as a Program EIR for the following reasons:

- The proposed project would be implemented over a 21-year period.
- The proposed project would be implemented over a large geographic area, which is defined as the total area within the City limits (approximately 50 square miles).
- Development plans and details have not been developed for new projects that could be facilitated by project approval.

Although finalized plans for future projects facilitated by project approval have not yet been prepared, citywide growth projections with respect to population, housing, and employment were used throughout this Recirculated Draft EIR to analyze impacts associated with the anticipated General Plan build out scenario (2040). Please refer to Chapter 3.0, Project Description, for additional information on socioeconomic projections associated with the proposed project.

This Recirculated Draft EIR (which is programmatic in nature) re-examines project-related impacts with respect to those topics that were evaluated in the 2016 Draft EIR in light of the proposed changes to the Project Description. Based on a review of the proposed changes, no revisions were made to the significance determinations for environmental topics that were previously found to be less than significant in the Initial Study prepared for the original project (refer to Section 2.3, Effects Found Not to be Significant, below).

According to Section 15152 of the *State CEQA Guidelines*, "tiering" involves the following: (1) using the analysis of general matters contained in a broader EIR (such as this programmatic Recirculated Draft EIR) in order to analyze subsequent environmental documentation (including EIRs, Mitigated

Negative Declarations, and Negative Declarations) on narrower projects; (2) incorporating by reference the general discussions from the broader EIR; and (3) concentrating the subsequent environmental documentation solely on the issues specific to the later project.

Subsequent activities associated with implementation of the proposed project that would require approval of a discretionary action (e.g., Tentative Tract Maps) would require a project-specific analysis of environmental impacts associated with implementing those maps, plans, and approvals. When reviewing future projects, the City would utilize the tiering provisions in CEQA to determine whether, in the light of project specific circumstances, the Recirculated Draft EIR prepared for the proposed project would still provide an adequate description of the broad effects of future projects as they are considered. Although environmental impacts of future individual projects occurring as a result of project approval will be analyzed under and compared against the analysis set forth in this Program EIR, a site-specific analysis will be required under CEQA. For example, a new EIR may be required for future specific development plans, as indicated in Chapter 4.0, Existing Environmental Setting, Environmental Analysis Impacts, and Mitigation Measures, of this Recirculated Draft EIR.

Pursuant to Section 15105(a) of the *State CEQA Guidelines*, the City will circulate the Recirculated Draft EIR for the proposed project for public review and comment for a period of 60 days. As described further in Section 15088.5(f) of the *State CEQA Guidelines,* a Lead Agency may choose to evaluate and respond to comments in one of two ways: (1) require reviewers to submit new comments when an EIR is substantially revised and the entire document is recirculated (in such cases, a Lead Agency need not respond to comments received during an earlier comment period); or
(2) request that reviewers limit their comments to only the revised chapter or portions of the Recirculated EIR. Since the Recirculated Draft EIR has been substantially revised*,* the City is requiring that reviewers submit new comments on the revised project addressed in the Recirculated EIR (Section 15088.5(f)(1) of the *State CEQA Guidelines*). As such, the City is not required to respond to comments received during the previous comment period for the original project and EIR. During the public review period, written comments concerning the adequacy of the document may be submitted by interested agencies and members of the public to:

City of Long Beach
Department of Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802
Attention: Alison Spindler, Project Manager
LBDS-EIR-Comments@longbeach.gov

Comments will only be accepted in written form via e-mail and/or hardcopy letter delivered to the above-referenced e-mail and mailing addresses, respectively. After the public review and comment period, written responses to all comments received pertaining to environmental issues will be prepared as part of the Final EIR. As required by CEQA, responses to comments submitted by responsible public agencies will be distributed to those agencies for review at least 10 days (in accordance with Section 15088 of the *State CEQA Guidelines*) prior to consideration and approval of the Final EIR by the Planning Commission and City Council. Upon completion of the Final EIR and other required documentation, the City Council may certify the Final EIR, adopt findings relative to

the proposed project's environmental effects after implementation of mitigation measures, and approve or deny the project.

2.2.4.2 Senate Bill 1000

Senate Bill (SB) 1000 was approved by Governor Jerry Brown on September 24, 2016. SB 1000 requires that general plans include goals, policies, and objectives pertaining to environmental justice. 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. The purpose of SB 1000 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.

The proposed LUE identifies environmental justice communities within the City (refer to Map LU-6 in the proposed LUE), including several Westside Long Beach neighborhoods that are located near the Port of Long Beach (POLB) and the Port of Los Angeles (POLA), as well as neighborhoods near major transportation routes and rail yards that handle the majority of port-related truck and train traffic. These environmental justice communities identified by the City are subject to environmental and air pollution impacts from ship, port, rail and truck operations. The proposed LUE discusses programs and strategies initiated by the POLB and POLA aimed at improving air quality in the vicinity of the ports and improving local neighborhoods through air-filtration systems and educational health outreach programs. In addition, the City addresses environmental justice issues by prioritizing investments in underserved communities through planned improvements to parks and open space, active transportation infrastructure, and social and environmental programming to address health disparities. The proposed LUE also includes the following goals, strategies, and policies related to environmental justice: Goal No. 6, Strategies No. 14, 15, and 16, and LU Policies 14-1 through 14-8, 15-1 through 15-4, and 16-1 through 16-12. Although there is not a designated section devoted to environmental justice in the Recirculated Draft EIR, issues related to environmental justice are addressed throughout the document where relevant.

2.2.4.3 Updates to the State CEQA Guidelines

In January 2018, OPR submitted a proposal for comprehensive updates to the State CEQA Guidelines to the California Natural Resources Agency. The submittal included proposed updates related to the analysis of greenhouse gas (GHG) emissions, energy, transportation impacts pursuant to Senate Bill (SB) 743, and wildfires, as well as revisions to Section 15126.2(a) in response to the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369. On December 28, 2018, during preparation of the Recirculated Draft EIR, the updated State CEQA Guidelines went into effect. As such, the Recirculated Draft EIR has been prepared in compliance with the updated State CEQA Guidelines. Effects Found Not to Be Significant

As required by *State CEQA Guidelines* Section 15128, this Recirculated Draft EIR must identify the effects of the proposed project determined not to be significant. The scoping process for this Recirculated Draft EIR included the preparation of an Initial Study. Per *State CEQA Guidelines*

Section 15063, the City prepared an Initial Study to determine whether the project could have a significant effect on the environment. The City determined that the proposed project may have a significant impact on the environment and issued an NOP soliciting comments from Responsible and Trustee Agencies and other interested parties, including members of the public. In addition to identifying potentially significant impacts of the project that required additional study, the Initial Study also identified effects determined not to be significant consistent with *State CEQA Guidelines* Section 15063(c)(3)(B). The analysis determined that the proposed project would result in no impacts to agricultural resources, biological resources, cultural and tribal cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, recreation, and wildfires.

The City's Initial Study and Environmental Checklist Form are discussed in Chapter 4.0 of this document, and a copy of the Initial Study and Environmental Checklist for the proposed project are included in Appendix A of this Recirculated Draft EIR.

2.2.5 Agricultural Resources

The planning area is almost entirely developed and is not used for agricultural or forestry purposes. No properties within the planning area are designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance nor are there areas zoned for agricultural or forestry uses. Further, there are no areas protected by a Williamson Act contract. Therefore, implementation of the proposed project would not result in environmental changes that could result in the conversion of farmland to non-agricultural use or the conversion of forest land to non-forest use. Furthermore, the proposed LUE encourages the creation of small-scale agricultural uses (e.g. community gardens, edible gardens, and small urban farms) (LU Policy 11-3, LU Policy 18-3, LU-M-40, and LU-M-88). Therefore, project-related impacts with respect to agricultural and forestry resources are not evaluated further in this Recirculated Draft EIR.

2.2.6 Biological Resources

In its existing setting, the planning area is almost entirely developed and is located in an urban area of Los Angeles County. These urban areas do not contain mapped habitat for any sensitive biological species as identified on local/regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or the United States Fish and Wildlife Service (USFWS).

Although the majority of the planning area is urban in nature, the City contains a number of open space areas (e.g., El Dorado Regional Park, the Los Angeles and San Gabriel Rivers, Los Cerritos Wetlands, beaches along the Pacific Ocean Shoreline, rights-of-way, marinas, bays, and wetlands) that have the potential to support sensitive biological resources. In order to preserve open space areas and protect sensitive biological resources, the proposed LUE aims to promote compact infill development on underutilized parcels located throughout the City (LU Policy 1-5, LU Policy 7-11, and Major Area of Change No. 7). The majority of parcels proposed for infill development are either paved or developed with uses that would be redeveloped as part of the proposed project. As such, these areas have previously been heavily disturbed and do not support sensitive biological resources. Furthermore, the proposed LUE would establish the Open Space PlaceType, which would encourage the preservation of existing wildlife habitat areas and would protect existing water bodies and habitat areas with known sensitive biological resources (Major Area of Change No. 8, LU

Strategy No. 20, and LU Policies 20-1 through 20-4). Therefore, the proposed LUE would protect and retain open space areas and would not have a substantial adverse effect on species identified as candidate, sensitive, or special-status species in local or regional plans, polices, or regulations by the CDFW or the USFWS, nor would the LUE have a substantial adverse effect on riparian habitat and other sensitive natural communities, or federally protected wetlands.

Implementation of the proposed project would not result in impacts related to interference with the movement of species within wildlife corridors or create conflicts with the City's tree preservation policy. Specifically, the LU Policy 20-12 in the proposed LUE requires that future development projects in the City comply with the Migratory Bird Treaty Act (Title 33, United States Code, Section 703 et seq., see also Title 50, Code of Federal Regulations, Part 10 and Section 3503 of the California Fish and Game Code), which makes it illegal to take any migratory bird, nests, or eggs of such a bird except under the terms of a valid federal permit. For example, future development projects would avoid impacts to migratory birds during construction activities by limiting such activities to outside of the nesting season and/or by conducting nesting bird surveys prior to any tree removal. The proposed LUE also encourages the establishment of wildlife movement corridors between urban areas, wetlands, and the San Gabriel and Los Angeles Rivers (LU Policy 20-7 and LU Policy 21-5). LU Policy 20-12 also requires future projects to comply with Chapter 14.28 of the Long Beach Municipal Code to ensure consistency with the City's tree preservation policy.

The UDE is intended to shape the aesthetics of the urban environment by preserving the character of existing neighborhoods while allowing for the continued evolution and improvement of the City in areas targeted for new development. The proposed UDE does not include any changes to land use types in the City that would impact biological resources. Rather, the UDE outlines goals and strategies that would guide the aesthetic character of new development within PlaceTypes proposed in the LUE. Therefore, implementation of the proposed UDE would not result in any physical impacts that would result in impacts to biological resources.

There is no adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other local or regional conservation plan covering the planning area. As such, implementation of the proposed project would not result in impacts to an adopted HCP/NCCP. However, the proposed project includes land use changes within the California Coastal Zone, which is regulated by the California Coastal Act (CCA). The CCA aims to protect Environmentally Sensitive Habitat Areas (ESHAs) within the Coastal Zone from impacts associated with new development. Please refer to Appendix C for an analysis of the project's consistency with the CCA and potential impacts related to ESHAs.

For the reasons outlined above, project-related impacts with respect to biological resources are not evaluated further in this Recirculated Draft EIR.

2.2.7 Cultural and Tribal Cultural Resources

Implementation of the proposed project would not cause a substantial change in the significance of a historical, archaeological, or tribal cultural resource.

The proposed project includes a number of goals and policies aimed at preserving and maintaining the integrity of existing historic resources located throughout the planning area. Specifically, the proposed UDE includes strategies aimed at the preservation of the aesthetic character of existing historic resources (UD Strategy No. 9, Policy UD 2-1, Policy UD 9-1, Policy UD 9-2, Policy UD 9-3, Policy UD 10-1, Policy UD 10-3, Policy UD 19-4, and Policy UD 20-5), while the proposed LUE aims to preserve existing historic structures and neighborhoods throughout the City (LU Goal No. 4, Strategy No. 3, LU-M-3, and LU-M-43) (Appendix H). Historic resources are further protected through regulation via the City's General Plan Historic Preservation Element (2010) and the City's Cultural Heritage Ordinance, which are contemplated and recognized in the LUE and UDE; the proposed project is consistent with these documents and does not modify either of them.

The proposed LUE also aims to minimize potential impacts to unknown archaeological resources, tribal cultural resources, and buried human remains through compliance with applicable federal, State, and local guidelines (as required by LU Policy 20-12). Specifically, the City would comply with Assembly Bill (AB) 52, which requires that notification be provided to Native American representatives[1] within 14 days of a decision to undertake a project or a determination that a project application is complete. All future projects requiring a General Plan or Specific Plan Amendment would also be required to conduct Native American consultation in compliance with SB 18. Compliance with policies in the proposed LUE, as well as applicable provisions of AB 52 and SB 18, would ensure that the proposed project would not result in impacts to cultural or tribal cultural resources. Therefore, impacts with respect to cultural or tribal cultural resources are not evaluated further in this Recirculated Draft EIR.

2.2.8 Geology and Soils

Given the City's location in the seismically active area of Southern California, portions of the planning area are located within a Fault Zone, as designated by the California Department of Conservation (DOC) and United States Geological Survey (USGS). Future individual projects facilitated from approval of the proposed project would be required to comply with LU Policy 20-12, which requires compliance with current building codes to reduce potential impacts associated with seismic hazards. As such, implementation of the proposed project would not expose people or structures to substantial adverse effects related to the risk of loss, injury, or death involving the rupture of a known earthquake fault, strong seismic ground shaking, or seismic- related failure (e.g., liquefaction or landslides).

The proposed project also includes LU Policy 20-12, which requires future projects to comply with Chapter 18.05 of the City's Municipal Code, which itself requires applicants to prepare a soils engineering report and/or geology report and comply with applicable geology and soils engineering recommendations prior to issuance of a grading permit. Compliance with the Building Code in effect at the time future projects are proposed and preparation of site-specific geology and soils engineering studies would ensure that future projects would not result in impacts related to

[1] In compliance with AB 52, that City is required to provide notification to all tribes that have requested notification of projects in each tribe's area of traditional and cultural affiliation.

substantial soil erosion, unstable soils, expansive soils, or soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. LU Policy 20-12 also aims to minimize potential impacts to unknown paleontological resources through compliance with applicable federal, State, and local guidelines. Therefore, project-related impacts with respect to geology and soils are not evaluated further in this Recirculated Draft EIR.

2.2.9 Hazards and Hazardous Materials

Hazardous materials are chemicals that could potentially cause harm during an accidental release or mishap, and are defined as being toxic, corrosive, flammable, reactive, and an irritant or strong sensitizer.[1] Hazardous substances include all chemicals regulated under the United States Department of Transportation "hazardous materials" regulations and the United States Environmental Protection Agency (EPA) "hazardous waste" regulations. Hazardous wastes require special handling and disposal because of their potential to damage public health and the environment. The probable frequency and severity of consequences from the routine transport, use, or disposal of hazardous materials is affected by the type of substance, the quantity used or managed, and the nature of the activities and operations.

Construction. 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 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. However, future individual projects resulting from project approval would result in construction activities that would potentially use a limited amount of hazardous and flammable substances/oils (e.g., fuels, lubricants, and solvents) typical during heavy equipment operation. The amount and use of hazardous chemicals during future construction activities would be regulated by existing government rules and regulations, such as the Hazardous Materials Transportation Act, the Resource Conservation and Recovery Act, and the California Code of Regulations (Title 22).

Operation. Future developments facilitated by project approval would result in long-term operational activities associated with varying land use types that could result in the use and storage of potentially hazardous materials. However, such materials would be required to be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. In addition, future projects would be required to comply with LU Policy 20-12, which requires the preparation of predemolition surveys for asbestos-containing materials (ACMs), lead-based paints (LBPs), polychlorinated biphenyls (PCBs), and mold on properties where such materials have been identified and/or if there is a likelihood that these materials pose a hazard at a subject property. LU Policy 20-12 also requires future project applicants to prepare a Contingency Plan that would outline procedures to be followed should unknown hazardous materials be encountered on a subject property during construction activities. Therefore,

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[1] A "sensitizer" is a chemical that can cause a substantial proportion of people or animals to develop an allergic reaction in normal tissue after repeated exposure to a chemical.

the proposed project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials; create a significant hazard through reasonable foreseeable upset and accident conditions involving the release of hazardous materials; or be located on a hazardous materials site. Further, future projects subject to discretionary review would be required to evaluate the potential for the emission of hazardous materials within 0.25 mile of an existing or proposed school.

The Long Beach Airport is located in the central portion of the City, north of Interstate 405 (I-405) between Cherry Avenue and Lakewood Boulevard. In addition, portions of the western area of the City are within the influence area for the Los Alamitos Joint Forces Training Base. Although project approval would allow for greater building heights and intensity, future developments would be required to comply with land use, noise, and height regulations outlined in the Airport Land Use Plan (ALUP) prepared for the Long Beach Airport and the Airport Environs Land Use Plan prepared for the Los Alamitos Joint Forces Training Base. Therefore, the project would not interfere with air traffic patterns, conflict with established Federal Aviation Administration (FAA) flight protection zones, conflict with building height standards established by the FAA for structures on and adjacent to the Long Beach Airport, or result in the exposure of people residing in the area to excessive airport noise.

Although the proposed project would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, future projects would be required to comply with policies set forth in the City's General Plan Public Safety Element (1975) related to emergency preparedness and evacuation procedures. Furthermore, since the planning area is generally built out, there are no properties adjacent to wildlands and there are no properties designated as being at risk for wildfires by the California Department of Forestry and Fire Protection (CAL FIRE). Therefore, implementation of the proposed project would not result in impacts related to emergency response activities or wildland fires. For these reasons, this issue is not evaluated further in this Recirculated Draft EIR.

Additionally, the proposed project includes the Neo-Industrial PlaceType, which is proposed for certain existing industrial land uses areas that are located within or adjacent to residential neighborhoods. The Neo-Industrial PlaceType encourages the location, evolution, and retention of lighter industrial activities that would involve cleaner industrial activities than those allowed in the existing Industrial land use classifications. The primary intention of the Neo-Industrial PlaceType is to transition from heavier, more polluting industrial uses, to cleaner industries, such as those associated with innovative start-up businesses and creative design offices in the arts, engineering, sciences, technology, media, education, and information industries, among others (LU Policy 7-2). Therefore, the Neo-Industrial PlaceType would provide a new land use designation that represents a shift away from more hazardous industrial industries and would also provide a buffer between sensitive receptors and the use and storage of potentially hazardous materials.

For the reasons outlined above, project-related impacts with respect to hazards and hazardous materials are not evaluated further in this Recirculated Draft EIR.

2.2.10 Hydrology and Water Quality

Although the proposed project 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. Further, project implementation would not result in impacts related to the violation of water quality standards or waste discharge requirements.

Construction. Although the proposed project would not include any physical improvements, the project would allow for future projects that could result in changes to impervious surfaces and drainage patterns on parcels proposed for development. As such, future developments located on properties over one acre in size would be required to obtain coverage under and comply with the requirements of the Construction General Permit. Project applicants would be required to provide the Waste Discharge Identification Number (WDID) to the City to demonstrate proof of coverage under the Construction General Permit. Pursuant to the requirements of the Construction General Permit and LU Policy 20-12 in the proposed LUE, each project over 1 acre in size would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) and implement Construction Best Management Practices (BMPs) to reduce potential sources of pollutant discharges that could adversely impact water quality in the City and surrounding area during construction of the future projects. In addition, all future projects that disturb soil would be required to submit an Erosion and Sediment Control Plan to the City for review and approval (required by LU Policy 20-12), which would identify BMPs to reduce construction-related pollutants. Therefore, construction activities of future projects would not violate water quality standards or waste discharge requirements.

According to the *Long Beach Water 2015 Urban Water Management Plan* (adopted June 2, 2016), groundwater supply for the City is considered to be very reliable, even during multi-year droughts 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, and San Gabriel River stream flows are used to replenish the groundwater basin, etc.). However, depending on the depth to groundwater and the depth of excavation, groundwater may be encountered during construction of future projects, and groundwater dewatering may be required. Future projects requiring groundwater dewatering activities during construction would be required to comply with LU Policy 20-12, which requires that applicants obtain coverage under and comply with the provisions of the Groundwater Discharge Permit. Project applicants would be required to provide the WDID to the City to demonstrate proof of coverage under the Groundwater Discharge Permit. Pursuant to the requirements of the Groundwater Discharge Permit, dewatered groundwater would be tested and treated (as necessary) prior to release into surface waters so violations of water quality standards or waste discharge requirements would not occur. In addition, in most cases, the duration of groundwater dewatering and the volume of groundwater extracted during construction would be small in volume compared to the overall size of the groundwater basin and would not result in the substantial depletion of groundwater supplies or interfere with groundwater recharge.

Operation. The proposed project places an emphasis on infill development projects that would be concentrated along transit corridors throughout the City and on parcels that are currently paved

and/or developed. As such, a majority of new projects facilitated by approval of the proposed project would be located in existing urban areas and would not result in impacts associated with the alteration of a stream or river or in the addition of substantial amounts of impervious surfaces. In addition, future applicants of new development or redevelopment projects (unless exempt) would be required to submit a Standard Urban Storm Water Mitigation Plan (SUSMP) and a Low Impact Development (LID) Plan (LU Policy 20-12). These plans would identify BMPs to be implemented during operation to control stormwater pollutants and runoff to minimize impacts related to the violation of water quality standards or waste discharge requirements and related to the alteration of existing drainage patterns. Further, because a majority of future projects would occur on already paved and developed sites, operational BMPs would be implemented where treatment BMPs likely currently do not exist, which would improve stormwater quality discharges from those sites. Therefore, implementation of the proposed project would not result in impacts associated with the violation of water quality standards and/or waste discharge requirements or with the alteration of a stream or river or drainage patterns.

As stated above, groundwater supply for the City is considered to be very reliable, even during multi-year droughts because extractions are strictly limited and because multiple forms of replenishment exist. In addition, because the proposed project places an emphasis on infill development projects on parcels that are currently paved and/or developed, the project would not substantially increase impervious surface areas in a manner that would substantially decrease infiltration. Therefore, implementation of the proposed project would not result in the substantial depletion of groundwater supplies or interfere with groundwater recharge.

According to Figure LU-1 in the proposed LUE, most of the City is located in areas that are not within Federal Emergency Management Agency (FEMA) 100-year flood zones, with the exception of areas near the Port of Long Beach, Downtown, and Naples Island. As such, the proposed LUE includes LU Policy 20-12, which requires future applicants to obtain development permits from the City's Floodplain Administrator for projects proposed in FEMA special flood hazard areas to minimize flooding impacts to people and structures. Therefore, project implementation would not result in impacts related to flooding.

According to the City's Seismic Safety Element (1988) and the California Emergency Management Agency (Cal EMA), the majority of the City is not located within a zone of seiche areas. 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. 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. Therefore, implementation of the project would not result in flood hazards associated with inundation as a result of a tsunami or seiche.

For the reasons outlined above, project-related impacts with respect to hydrology and water quality are not evaluated further in this Recirculated Draft EIR.

2.2.11 Mineral Resources

According to the City's General Plan Conservation Element (1973), the mineral resources within the City have historically consisted of oil and natural gas. However, over the last century, oil and natural

gas extractions have diminished as the resources have become increasingly depleted. Although extraction operations continue, they are on a reduced scale as compared to past historic levels. Although the proposed project would allow for the intensification, redistribution, and development of currently undeveloped parcels with higher-density development, approval of the proposed LUE and UDE 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. Further, the proposed LUE aims to transition heavy industrial uses, including uses targeting oil extraction, to green industrial activities and/or natural green areas and park uses (LU Policy 7-3 and LU Policy 20-6). For these reasons, project-related impacts with respect to mineral resources are not evaluated further in this Recirculated Draft EIR.

2.2.12 Recreation

According to the proposed LUE, the planning area 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. Although the number of acres of existing open space and recreational uses currently falls short of the City's goal of providing 8 acres per 1,000 residents (as established in the 2002 General Plan Open Space Element), the proposed project aims to create additional open space and recreational uses to meet this goal. Specifically, the proposed LUE would establish the Open Space PlaceType that would preserve existing parks and recreational facilities, while also creating additional parks and urban open spaces to increase connectivity between these resources and surrounding neighborhoods. In addition, one of the primary goals of the proposed LUE is to "create, restore, and preserve open space" uses in the City, including parks and recreation uses. For example, LU Policy 18-7 calls for prioritizing the location of new parks in underserved or low-income communities with the lowest ratio of park space per thousand residents.

Additionally, the City's General Plan Open Space Element would remain an adopted element of the General Plan and would be unaffected by approval of the proposed project. The City will continue to pursue open space goals and a policy as set forth in the Open Space Element, which itself is consistent with the LUE and the UDE. As such, project implementation would not result in significant impacts related to increased use and deterioration of recreational facilities, nor would it include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, project-related impacts with respect to recreation are not evaluated further in this Recirculated Draft EIR.

2.2.13 Wildfire

In its existing setting, the planning area is almost entirely developed and is located in an urban area of Los Angeles County. California Department of Forestry and Fire Protection (CAL FIRE) publishes maps that predict the threat of fire in individual counties in the State; Local Responsibility Areas and State or Federal Responsibility Areas are classified as either very high fire hazard severity zones (VHFHSZ) or non-VHFHSZ based on factors including fuel availability, topography, fire history, and

climate. The project area is not located in or near a State Responsibility Area and does not include land classified as VHFHSZ as defined by CAL FIRE.[1]

Although the proposed project would allow for the intensification, redistribution, and development of currently undeveloped or underdeveloped parcels with higher-density development, future projects would be required to comply with policies set forth in the City's General Plan Public Safety Element (1975) related to emergency preparedness and evacuation procedures. In addition, approval of the proposed LUE does not include any physical improvements that would result in the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Furthermore, since the planning area is generally built out, there are no properties adjacent to wildlands and there are no properties designated as being at risk for wildfires by CAL FIRE. Therefore, implementation of the proposed project would not result in impacts related to emergency response activities or wildfire risks. For these reasons, this issue is not evaluated further in this Recirculated Draft EIR.

2.3 FORMAT OF THE EIR

Pursuant to *State CEQA Guidelines,* Section 15120(c), this Recirculated Draft EIR contains the information and analysis required by *State CEQA Guidelines,* Sections 15122 through 15131. Each of the required elements is covered in one of the Recirculated Draft EIR chapters described below.

Chapter 1.0: Executive Summary

Chapter 1.0 contains the Executive Summary of the Recirculated Draft EIR, listing all significant project impacts, mitigation measures that have been recommended to reduce any significant impacts of the proposed project, and the level of significance of each impact following mitigation. A summary of effects found not to be significant and therefore not evaluated further in the Recirculated Draft EIR is also provided. The summary is presented in a matrix (tabular) format.

Chapter 2.0: Introduction

Chapter 2.0 contains a discussion of the purpose and intended use of the Recirculated Draft EIR; a background on project initiation, the NOP, and the original Draft EIR that was circulated for the project; and areas of controversy known to the Lead Agency, including issues raised by the public. A summary discussion of effects found not to be significant and, therefore, not included in the Recirculated Draft EIR analysis is also included in this chapter.

Chapter 3.0: Project Description

Chapter 3.0 includes a discussion of the project's geographical setting, the history of the project site, a summary of the revisions included as part of the proposed project, and the project's goals, objectives, characteristics, and components.

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[1] California Department of Forestry and Fire Protection (CAL FIRE). 2011. Very High Fire Hazard Severity Zones in Local Responsibility Areas. Los Angeles County. September 2011.

Chapter 4.0: Environmental Analysis, Impacts, and Mitigation Measures

Chapter 4.0 includes an analysis of the proposed project's environmental impacts. It is organized into the following topical sections: aesthetics, air quality, GHG emissions, land use and planning, noise, population and housing, public services, transportation/traffic, utilities and service systems, and energy. The environmental setting discussions describe the "existing conditions" of the environment in the planning area and in the vicinity of the site as they pertain to the environmental issues being analyzed (Section 15125 of the *State CEQA Guidelines*).

The project impact discussions identify and focus on the significant environmental effects of the proposed project. The direct and indirect significant effects of the proposed project on the environment are identified and described, giving due consideration to both the short-term and long-term effects, as necessary (Section 15126.2[a] of the *State CEQA Guidelines*).

Chapter 4.0 also includes a discussion of the cumulative effects of the proposed project within the analysis of each environmental topic when considered in combination with other projects, causing related impacts as required by Section 15130 of the *State CEQA Guidelines*. Cumulative impacts are based on the anticipated General Plan build out scenario and surrounding area.

The discussions of mitigation measures identify and describe feasible measures that could minimize or lessen significant adverse impacts for each significant environmental effect identified in the Recirculated Draft EIR (Section 15126.4 of the *State CEQA Guidelines*). The levels of significance before and after mitigation are provided. Unavoidable adverse effects are identified where mitigation is not expected to reduce the effects to less than significant levels

Chapter 5.0: Alternatives to the Proposed Project

In accordance with *State CEQA Guidelines* Section 15126.6, the alternatives discussion in Chapter 5.0 describes a reasonable range of alternatives that could feasibly attain the basic objectives of the project and that are capable of eliminating any significant adverse environmental effects or reducing them to a less than significant level. Alternatives analyzed in Chapter 5.0 include the No Project Alternative and the Reduced Project Alternative. Alternatives that were considered during the environmental review process, but were ultimately rejected from further consideration include an Alternative Project Site Alternative, a Reduced Vehicle Miles Traveled (VMT) Alternative/Transit-Oriented Alternative, and a Neighborhood-Serving Centers and Corridors Commercial-Only Alternative.

Chapter 6.0: Long-Term Implications of the Project

Chapter 6.0 includes CEQA-mandated discussions required by Section 15126.2 of the *State CEQA Guidelines* regarding: (a) significant irreversible environmental changes that would result from implementation of the proposed project, (b) significant adverse environmental impacts for which either no mitigation or only partial mitigation is feasible, and (c) growth-inducing impacts of the proposed project.

Chapter 7.0: Mitigation Monitoring and Reporting Program

PRC Section 21081.6 requires that agencies adopt a mitigation monitoring and reporting program for any project for which findings have been made pursuant to PRC Section 21081. Chapter 7.0 provides a list of all proposed project mitigation measures, defines the party responsible for implementation of those measures, and identifies the timing for implementation of each control measure.

Chapter 8.0: Significant Unavoidable Impacts

Chapter 8.0 summarizes those significant environmental impacts of the proposed project for which either no mitigation or only partial mitigation is feasible and which would therefore remain significant impacts after mitigation (*State CEQA Guidelines*, Section 15126(b)).

Chapter 9.0: Persons Contacted and Chapter 10.0: List of Preparers

Chapters 9.0 and 10.0 provide the organizations and persons contacted during preparation of the Recirculated Draft EIR, the preparers of the Recirculated Draft EIR, the technical report authors, and other experts included in the preparation of the document.

Chapter 11.0: References and Chapter 12.0: List of Acronyms

Chapters 11.0 and 12.0 provide the references and acronyms used in this Recirculated Draft EIR, respectively.

2.4 INCORPORATION BY REFERENCE

As permitted in Section 15150 of the *State CEQA Guidelines*, an EIR may reference all or portions of another document that is a matter of public record or is generally available to the public. Information from the documents that have been incorporated by reference has been briefly summarized in the appropriate sections of this Recirculated Draft EIR, along with a description of how the public may obtain and review these documents. These documents include:

- City of Long Beach General Plan Elements (as amended) (website: http://www.lbds.info/planning/advance_planning/general_plan.asp)
- City of Long Beach Municipal Code and other titles referenced herein (website: https://www.municode.com/library/ca/long_beach/codes/municipal_code?nodeId=16115)
- Proposed Long Beach General Plan Land Use and Urban Design Elements (August 2016) (Appendix H) and also available at:

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

Documents that are incorporated by reference are available for review at the City of Long Beach, Department of Development Services, 333 West Ocean Boulevard, 5th Floor, Long Beach, California 90802.

3.0 PROJECT DESCRIPTION

This Recirculated Draft Environmental Impact Report (EIR) has been prepared to evaluate the environmental impacts that may result from implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project). As Lead Agency, the City of Long Beach (City) has the authority for preparation of this Recirculated Draft EIR and, after the comment/response process, certification of the Recirculated Final EIR and approval of the proposed project as described in this Recirculated Draft EIR. The City and Responsible Agencies have the authority to make decisions on discretionary actions related to the approval of the proposed project. This Recirculated Draft EIR will serve as a Program EIR pursuant to the *State California Environmental Quality Act (CEQA) Guidelines,* Section 15168. A Program EIR is appropriate for a series of related actions that can be characterized as one large project. This Recirculated Draft EIR is intended to serve as an informational document to be considered by the City and the Responsible Agencies during deliberations on the proposed project. This Recirculated Draft EIR evaluates for a reasonable worst-case scenario of potential environmental impacts associated with the proposed project and provides mitigation where necessary. The analysis in this Recirculated Draft EIR is based on the General Plan Land Use Element and the General Plan Urban Design Element (City of Long Beach, March 2018) (Appendix H).

A Draft EIR was previously circulated for an extended period of 78 days (33 days longer than the required 45-day public review period), from September 1, 2016, to November 18, 2016. As per *State CEQA Guidelines* Section 15088.5, a lead agency is required to recirculate an EIR when significant new information is added to the EIR, or when recirculation occurs after giving public notice of the availability of the Draft EIR for public review and before certification of the EIR. 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. Therefore, in compliance with the California Public Resources Code (PRC) Section 21092.1 and *State CEQA Guidelines* Section 15088.5, the City prepared this Recirculated Draft EIR to evaluate whether the revised project would result in a new environmental impact or a substantial increase in the severity of an environmental impact as compared to the original project and the 2016 Draft EIR. Consideration was also given as to whether or not a feasible alternative or mitigation measure(s) could lessen the impacts of the project as compared to the 2016 Draft EIR. Therefore, in order to provide the public and agencies a meaningful opportunity to review and comment, the Draft EIR is being recirculated.

3.1 PROJECT LOCATION AND SETTING

As illustrated by Figure 3.1, 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.

Regional access to the City is provided by Interstate 710 (I-710, which traverses the western portion of the City from north to south), Interstate 405 (I-405, which traverses the central portion of the City from northwest to southeast), State Route 91 (SR-91, which traverses the northernmost portion of the City from east to west), State Routes 103 and 47 (SR-103 and SR-47, respectively, which traverse the western border of the City from north to south), and State Route 1 (SR-1, which traverses the central portion of the City from east to west), commonly referred to as Pacific Coast Highway (PCH or SR-1). In addition, Interstate 605 and State Route 22 (I-605 and SR-22, respectively, and located northeast and east of the City) provide access to the eastern portion of the City.

In addition, a variety of transit routes maintained by the Metropolitan Transportation Authority (Metro), the Long Beach Transit, and the Orange County Transportation Authority (OCTA) provide both regional and local access to and within the City. A variety of bicycle lanes and paths serve the City, including regional connections along PCH, the San Gabriel River pathway, and the Los Angeles River pathway.

3.2 COMMUNITY PROFILE

3.2.1 Historical Perspective

The City of Long Beach traces its roots to its early occupation by the Gabrielino-Tongva-Kizh Native American Tribe in areas adjacent to the Los Angeles and San Gabriel Rivers. For this tribe of hunters and gatherers, the Los Angeles and San Gabriel Rivers provided a source of water and food. However, the demographic composition of the area significantly changed in 1781, during the Spanish/Rancho period (1769 to 1848), when Rancho Los Cerritos and Rancho Los Alamitos were established. Together, these ranchos combined to comprise an area that now includes a large majority of the area within the City's current geographic boundaries. The area experienced another demographic shift again in 1881 when entrepreneur William Willmore established a town named Willmore City (now known as the Willmore area of Downtown Long Beach). Following the establishment of Willmore City, thousands of families moved into the area, resulting in the City's incorporation on December 13, 1897.[1] Consequently, by the turn of the century, the Willmore City area was a popular tourist attraction as its amenities included a public wharf and pier, the Pacific Electric Railway line, and the Pike Amusement Park. The area continued to flourish following the discovery of oil in 1921 near Signal Hill. Similarly, the establishment of several U.S. Naval air bases in the City and associated conglomerate uses (i.e., Douglas Aircraft Company) furthered the City's population growth and fueled the suburbanization of the City from 1930 to 1960. As part of the City's suburbanization, roadways were constructed and low-density housing tracts were developed in the northern and eastern areas of the City. The presence of an expanded circulation system also served as a catalyst for new commercial establishments throughout the City. From 1970 to 1999, the City saw the closure of the Pike Pier and the revitalization of the Downtown area. In addition, the City established Shoreline Village in the 1980s and developed its first modern hotels and office

[1] California Association of Local Agency Formation Commissions, California Cities by Incorporation Date, last updated March 2011.

buildings in the Downtown area. Most recently, the City has developed a variety of new projects on infill sites within the Downtown area along the Metro Blue Line.

3.2.2 Long Beach Today

Today, the City of Long Beach is a unique community with strong ties to its historic roots. The City has established several historic districts and resources throughout the City for which protection should be provided and has established several development projects that pay homage to its historic past. For example, the Pike at Rainbow Harbor pays tribute to Willmore City and Long Beach's origins as a thriving coastal community for residents, tourists, and U.S. Naval businesses alike. Currently, California State University, Long Beach; the Port of Long Beach; Long Beach Memorial Medical Center; the U.S. Department of Veterans Affairs Long Beach Medical Center; and several other regional-serving resources contribute to the City's international reputation and serve to characterize the community as a City with strong ties to the technology, educational, and medical sectors.

As described further below, the City is seeking to improve its existing uses, including those regional-serving uses listed above, through a broadened approach to land use, economics, sustainability, and the environment.

3.2.3 Long Beach's Vision for the Future

As Long Beach continues to evolve, the City aims to target growth and mobility, capitalize on existing strengths, build up existing businesses, and become a smarter and more sustainable City. Specifically, the City aims to promote new development projects on underutilized sites and to promote mixed-use development that is connected to the City's larger alternative transportation network in order to reduce reliance on automobiles. The proposed project aims to establish development patterns and densities/intensities consistent with the adopted Mobility Element's (October 2013) Goal No. 1: Create an Efficient, Balanced, Multimodal Mobility Network and the Southern California Association of Governments' (SCAG) 2016–2040 Regional Transportation Plan (RTP) goals of facilitating alternative modes of transportation and encouraging land use patterns to maximize mobility and accessibility for all people and reduce vehicular miles traveled and associated greenhouse gas emissions. In addition, the City aims to capitalize on its strengths and build up businesses by encouraging commercial, industrial, and technology industries to relocate to the City given its location near the borders of Los Angeles and Orange Counties, the Pacific Ocean, and the Port of Long Beach. In order to become a smarter and more sustainable City, Long Beach will encourage the development of green buildings, the provision of wireless internet in public spaces and on transit services, the provision of reliable renewable energy options, and the creation of community gardens along with the provision of healthy food options. Through the attainment of these objectives, the City aims to maintain its reputation as a unique and thriving community in which people choose to both live and work.

3.3 LONG BEACH GENERAL PLAN

The Long Beach General Plan represents a comprehensive approach for managing the community's future. The Long Beach General Plan also reflects the City's long-term strategy for directing physical, economic, and cultural development. The General Plan is a legally binding policy document intended

to serve as a guide by City officials, developers, and the community when making decisions regarding future development and the management of land and natural resources.

In relation to development, the Long Beach General Plan serves as a blueprint guiding the type of community the City desires for its future, and also provides the means by which that desired future can be obtained. The General Plan establishes goals, policies, and directions and utilizes text, maps, and graphic illustrations to express the organization of the physical, environmental, economic, and social environment sought by the community in order to achieve a healthful, functional, and desirable place in which to reside and work.

3.3.1 State General Plan Requirements

Government Code Section 65302 et seq. requires that every city and county in the State of California (State) prepare and adopt a "comprehensive, long-term general plan for the physical development of the county or city, and of any land outside its boundaries which in the planning agency's judgment bears relation to its planning." As further mandated by the State, the General Plan must serve to:

- Identify land use, circulation, environmental, economic, and social goals and policies for the City and its surrounding planning area as they relate to land use and development;
- Provide a framework within which both the City Planning Commission and the City Council can make land use decisions;
- Provide citizens the opportunity to participate in the planning and decision-making process affecting the City and its surrounding planning area; and
- Inform citizens, developers, decision-makers, and other agencies, as appropriate, of the City's basic rules that will guide both environmental protection and land development decisions within the City and surrounding planning area.

State law requires that the General Plan include the following seven mandatory elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety. While these seven elements are required, State law also allows flexibility in how each local jurisdiction structures these elements. In addition to these seven elements, the existing Long Beach General Plan includes elements addressing the following issues beyond those required by State law: Historic Preservation, Air Quality, Seismic Safety, and Scenic Routes. While State law does not mandate discussion of these issues, once adopted, "optional" issues have the same force and effect as policies related to the General Plan elements required by the State. In addition, the City also has a certified Local Coastal Program (LCP) governing land use in coastal areas of the City. As required by the California Coastal Act, the City's LCP is consistent with the land use plan, goals, objectives, and policies established in the City's General Plan.

Government Code Section 65040.2 requires the State Office of Planning and Research (OPR) to adopt and periodically revise the General Plan Guidelines (GPG). The 2017 GPG is used to guide cities and counties in the State regarding the preparation and content of general plans. In order to streamline the process and reduce costs associated with adopting or amending a general plan, the

2017 GPG provides free online tools and resources, promotes increased use of online data, and includes templates and sample policies.

3.3.2 General Plan Consistency

In addition to providing a comprehensive strategy for directing future growth, State law mandates that the General Plan be internally consistent. Specifically, Government Code Section 65300.5 requires the various components of a General Plan to, "comprise an integrated, internally consistent and compatible statement of policies." The three primary components required to maintain internal General Plan consistency are as follows:

1. **Equal Status among General Plan Elements.** All elements of a General Plan have equal status and no one General Plan element takes precedence over any other. As such, the General Plan elements must be consistent in order to avoid potential conflicts between or among the elements.

2. **Consistency between Elements and within Individual Elements.** All General Plan elements must be consistent with each other. For example, policies and implementation strategies outlined in one General Plan element must not require or encourage an action that would be prohibited or discouraged by policies and implementation strategies in another General Plan element.

3. **General Plan Text, Diagram, and Map Consistency.** Text, diagrams, and maps must be consistent with one another and with goals and policies outlined in all elements of the General Plan.

It is also important to note that the General Plan aims to balance competing objectives and community priorities. As such, in interpreting goals, policies, and implementation strategies in the General Plan, care must be given to determine the "best fit" for the action to be taken, aimed towards achieving the City's short-term and long-term priorities.

3.3.3 Comprehensive Nature of the General Plan

The Long Beach General Plan establishes goals, policies, and implementation strategies aimed at guiding the physical, social, environmental, and economic environments. In addition to addressing the State-mandated components of a General Plan, the Long Beach General Plan also responds to current and future issues the City faces. In order to fully address these issues, the Long Beach General Plan planning area encompasses the current City limits, while also keeping in mind the regional context of its planning efforts. For example, certain issues such as traffic, transit, air quality, and greenhouse gas (GHG) emissions have both a local and regional component. In such cases, the General Plan addresses the degree to which the City's interests, values, and concerns are congruent or conflict with existing regional policies. Furthermore, it is also the role of the Long Beach General Plan to define the extent to which the City can address local issues and those issues that require cooperative actions among several jurisdictions.

3.4 PROJECT HISTORY

Over the last century, the City has evolved from a ranching community (associated with Rancho Los Cerritos and Rancho Los Alamitos) to a thriving metropolis. Since the late 19th century, the City has grown and been shaped by changes to the fiscal and natural environments. Noteworthy events that have characterized the City include the discovery of oil in 1921, the growth of the defense industry from 1930 to 1960, post-World War II suburban development, demographic changes and redevelopment efforts occurring from the 1970s to the early 1990s, reinvestment in the Downtown area and continued demographic changes from the early 1990s to 2012, and the maturity of the Downtown area and citywide population growth that occur today.[1] In order to allow for increased flexibility in responding to such changes, the City proposes to update and replace the existing 1989 Land Use Element with a new LUE. The decision to update and replace its LUE was made in part to accomplish the following:

- Guide physical development in the City based on the projected population increases through the horizon year 2040 and address the need for new housing units to accommodate the 12.2 percent of existing households experiencing overcrowding;
- Allocate financial resources for necessary community services and infrastructure maintenance;
- Sustain a diverse and competitive local economy;
- Encourage sustainable development;
- Retain the character of existing residential neighborhoods;
- Provide a greater variety in housing, mobility, and lifestyle choices;
- Encourage land use patterns to maximize mobility and accessibility for all people and reduce vehicular miles traveled and associated greenhouse gas emissions;
- Improve the health of City residents through urban planning approaches; and
- Respond to changing technologies.

Similarly, the City has decided to adopt a new Urban Design Element (UDE) as part of its General Plan in order to aid in shaping the continued evolution of the urban environment in the City while also allowing for a balance between new development and the existing natural environment. The UDE and LUE General Plan Elements are collectively referred to as the "proposed project" throughout this Recirculated Draft EIR.

3.5 PROPOSED PROJECT

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 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

[1] City of Long Beach. Draft General Plan Land Use Element. March 2018. Also refer to Appendix H of this Recirculated Draft EIR.

roadways. The proposed project includes the approval of both the General Plan Land Use and Urban Design Elements, which would replace the existing LUE and SRE. The following discussion summarizes the key components of each of the proposed General Plan Elements.

3.5.1 Land Use Element

At the heart of the City's General Plan is the 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 emphasis of the LUE is on the desired use of land within a community, including future development in the City.

The existing 1989 LUE includes a summary of existing land use types and contains a discussion of the intended and allowable uses within each land use type. The LUE also corresponds to a General Plan Land Use Map, which illustrates the intended location and distribution of each land use type on a parcel-by-parcel basis. In addition to a description and map of land use categories, the existing 1989 LUE establishes goals and objectives aimed at guiding the orderly pattern of development in the City. The existing LUE also describes potential obstacles to future development in the City, such as areas subject to flooding, and identifies a plan for solid waste management to accommodate new development as allowed under the existing LUE. The LUE concludes by outlining the guidelines for amending the LUE to ensure that future amendments have a beneficial impact on the City.

The proposed LUE would replace the existing 1989 General Plan LUE. In the event that the proposed updated LUE is adopted by the City, the City's existing LCP would subsequently be updated to allow for the land use changes proposed within those areas located within the California Coastal Zone boundary. Approval of the LUE would also result in updates to the City's Zoning Code to resolve several specific inconsistencies. As described in Section 3.7, Project Design Features, later in this chapter, the proposed project includes a Project Design Feature (PDF) requiring that the City implement a Zone Change Program designed to resolve any zone change inconsistencies within 5 years of project approval. Approval of the LUE would also result in updates to the City's LCP and adopted Planned Development areas to implement new long-range development plans within coastal areas of the City. This Recirculated Draft EIR addresses the proposed LUE and UDE projects, but does not analyze amendments to the LCP, Zoning Code, or Planned Development area plans.

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. Refer to Figure 3.2, Community Plan Areas, for a map of community plan areas and neighborhoods.

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. Refer to Figure 3.3, Existing General Plan (1989) Land Use Map, for an illustration of

the City's existing General Plan Land Use Map. 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 (refer to Figure 3.4, Project PlaceTypes). While the text of the LUE notes 11 PlaceTypes, this EIR and the impact analyses contained therein refers to a total of 14 PlaceTypes in order to acknowledge the varying intensities (i.e., Low and Moderate) within certain PlaceTypes (the Multi-Family Residential, Neighborhood-Serving Centers and Corridors, and Transit-Oriented Development PlaceTypes). 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 14 PlaceTypes are illustrated on Figure 3.4 and are described in further detail below.

1. **Open Space.** The Open Space (OS) 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. Allowable uses within this PlaceType include 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, and limited commercial recreation uses that support existing programs and facilities. 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 areas characterized by urban development. The maximum height of support structures allowed under this PlaceType is two stories.

2. **Founding and Contemporary Neighborhood.** The Founding and Contemporary Neighborhood (FCN) PlaceType represents the City's low-density residential neighborhoods, from older street car urban neighborhoods (Founding Neighborhoods) to post-World War II suburban housing (Contemporary Neighborhoods), which are predominantly 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) that would provide flexibility for residents to reinvest and adapt their homes to meet changing lifestyles and long-term maintenance needs. 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). Allowable uses within this PlaceType include single-family low-density housing and neighborhood-serving commercial uses. The maximum density, intensity, and height allowed under this PlaceType are 7 to 18 dwelling units per acre (du/ac), a 0.25 to 0.50 floor-to-area ratio (FAR), and typically two stories (with a three-story allowance on the Peninsula due to sea level rise projections), respectively.

3–4. **Multi-Family Residential—Low and Moderate.** The Multi-Family Residential (MFR-L and MFR-M) PlaceTypes aim to provide a variety of housing options (i.e., condominium duplex, triplex, and garden apartment uses) adjacent to neighborhood-serving commercial uses to meet the range of lifestyles of the City's community members. These PlaceTypes would be scattered throughout the City and are intended to be utilized as a buffer use between less intense and more intense residential neighborhoods. The Multi-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 density, intensity, and height allowed under the MFR-L PlaceType are as follows: up to 29 du/ac based on lot size, a 0.25 to 0.50 FAR, and up to four stories, respectively. The maximum density, intensity, and height allowed under the MFR-M PlaceType are as follows: up to 62 du/ac based on lot size, a 0.50 to 0.75 FAR, and up to six stories respectively.

5–6. **Neighborhood-Serving Centers and Corridors—Low and Moderate.** Commercial corridors and centers are located throughout the City. As such, the Neighborhood-Serving Centers and Corridors (NSC-L and NSC-M) PlaceTypes aim 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 these PlaceTypes 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. Allowable uses within these PlaceTypes include low- and moderate- intensity residential and commercial uses. The maximum density, intensity, and height allowed under the NSC-L PlaceType are as follows: up to 44 du/ac based on lot size, a 0.50 to 1.00 FAR, and four stories, respectively. The maximum density, intensity, and height allowed under the NSC-M PlaceType are as follows: up to 54 du/ac based on lot size, a 1.00 to 1.50 FAR, and up to seven stories, respectively.

7–8. **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 (TOD-L and TOD-M) PlaceTypes aim 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 PlaceTypes 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 these PlaceTypes have specifically been concentrated near Metro Blue Line stations, this PlaceType could also be applicable to areas containing future transit systems in the City. Allowable uses within this PlaceType include moderate urban density apartment and condominium uses and moderate-intensity commercial uses. The maximum intensity and height allowed under the TOD-L PlaceType is a 1.50 to 3.00 FAR and five stories (consistent with the Midtown Specific Plan). The maximum intensity and height allowed under the TOD-M PlaceType is a 2.00 to 4.00 FAR and ten stories.

9. **Community Commercial.** 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 (CC) 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. Allowable uses within this PlaceType include commercial uses that serve community-based needs for goods and services. The maximum intensity and height allowed under the CC PlaceType is a 2.00 to 4.00 FAR and seven stories.

10. **Industrial.** The Industrial (I) 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 industrial lands in the City and generally discourage the conversion of these lands to non-industrial uses. Allowable uses within this PlaceType include research and development activities, storage, industrial, and manufacturing activities, tank farms, and oil-drilling activities. 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 65 ft.

11. **Neo-Industrial.** The Neo-Industrial (NI) 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. Allowable uses within this PlaceType include light industrial, clean manufacturing, offices, commercial uses to support business endeavors, and repurposed buildings with live/work artist studios. Neo Industrial PlaceTypes would generally be located in areas above Market Street in North Long Beach, the Zaferia area on Anaheim Street and Obispo Avenue, and the Magnolia Industrial Group area located between Anaheim Street and PCH west of Magnolia Avenue. The maximum density, intensity, and height allowed under the Neo Industrial PlaceType is up to 36 du/ac, a 0.50 to 1.00 FAR, and 65 ft, respectively.

12. **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). Allowable uses within this Regional-Serving Facility (RSF) PlaceType include medical centers, higher education campuses, port services, airport uses, regional destination retail centers (i.e., Douglas Park) and recreation uses, public facilities, and the Southeast Area Specific Plan (SEASP) area.

The SEASP area, which is comprised of approximately 1,500 acres and largely consists of residential, commercial, industrial, wetland, and open space, is targeted as an area with new opportunities for pedestrian-oriented development and the revitalization of the Los Cerritos Wetlands. The City adopted the SEASP in 2017 as part of its effort to encourage responsible growth while balancing resource preservation in this area of southeast Long Beach.

Existing regional-serving facilities in the City generally consist of large properties that 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 the Regional-Serving PlaceType designation. For example, the height limitations in areas near the Long Beach Airport are lower than in other areas due to height standards established by the Federal Aviation Administration (FAA).

13. **Downtown.** The Downtown (DT) 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, calls for a mix of land uses and housing types, emphasizing the placement of shops, restaurants, and cafes on the ground floor of these uses within the Downtown area. The height limitations proposed for this PlaceType designation are set forth in the existing 2012 Downtown Plan.

14. **Waterfront.** The Waterfront (WF) PlaceType includes three primary areas along the City's shoreline, including the Downtown Shoreline waterfront, Alamitos Bay Marina, and the Belmont Pier and Pool Complex 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 (e.g., 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.[1] It is the City's stated vision in the updated LUE that these 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 LCP, which regulates land use in areas within this Zone. The height limitations proposed for this PlaceType designation vary by area. For example, the proposed LUE would allow for heights of

[1] The Belmont Pool facilities were demolished in December 2014 due to structural instability. Plans for the redevelopment of the Belmont Pool facilities are currently on-going.

240 ft and over in waterfront areas near the City's Downtown area, whereas height limitations are proposed at two-to-three stories in waterfront areas further east along the City's coastline.

Table 3.A, PlaceType Densities, Intensities and Heights, summarizes the residential densities, non-residential intensities, and maximum building heights allowed within the proposed PlaceTypes. The allowable heights proposed for each PlaceType are also illustrated in Figure 3.5, PlaceType Height Limitations.

Table 3.A: PlaceType Densities, Intensities, and Heights

PlaceType	Residential Density (du/acre)	Non-Residential Intensity (FAR)[1]	Height
Open Space	N/A	See Open Space and Recreation Element of the General Plan	2 stories
Founding and Contemporary Neighborhood[2]	7–18	0.25 to 0.50	2 stories (varies by area)
Multi-Family Residential:			
Low	Up to 29 du/ac based on lot size	0.25 to 0.50	4 stories
Moderate	Up to 62 du/ac based on lot size	0.50 to 0.75	6 stories
Neighborhood-Serving Centers and Corridors:			
Low	Up to 44 du/ac based on lot size	0.50 to 1.00	4 stories
Moderate	Up to 54 du/ac based on lot size	1.00 to 1.50	7 stories
Transit-Oriented Development:			
Low	N/A	1.50 to 3.00	5 stories
Moderate	N/A	2.00 to 4.00	10 stories
Community Commercial	N/A	2.00 to 4.00	7 stories
Industrial	N/A	N/A	65 ft
Neo-Industrial	Up to 36 du/ac based on lot size	0.50 to 1.00	65 ft
Regional-Serving Facility	N/A	N/A	See Figure 3.5, PlaceType Height Limitations
Downtown (See Downtown Plan)	Regulated through FAR and height	Regulated through FAR and height	See Downtown Plan
Waterfront	Vary by area; see descriptions	See descriptions (vary by area)	See Figure 3.5, PlaceType Height Limitations (varies by area)

Source: Proposed Long Beach General Plan Land Use Element (March 2018) (Appendix H).

[1] FAR refers to the floor area of all principal and accessory buildings on a site as a ratio of the total size of the land on which it is developed.

[2] Height may be increased to 3 stories consistent with the existing land use pattern. See Figure 3.5 (PlaceType Height Limitations) for maximum height.

du/ac = dwelling unit per acre
du/lot = dwelling unit per lot
FAR = floor-to-area ratio
ft = foot/feet
N/A = not applicable

3.5.1.1 Major Areas of Change

The project proposes to update the current General Plan LUE with a new LUE that would reflect the current needs and opportunities within the City, update land uses and bring the General Plan into conformity with the City's recently 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. Major Areas of Change are illustrated on Figure 3.6, Major Areas of Change. There are eight primary areas where changes associated with the updated LUE would be focused, as described in further detail below.

1. The first Major Area of Change involves the **creation, restoration, and preservation of more open space** throughout the City.

2. The second Major Area of Change proposes to **convert industrial edges and districts to Neo-Industrial uses**.

3. The third Major Area of Change aims **to promote regional-serving uses** by maintaining existing regional-serving facilities throughout the City.

4. The fourth Major Area of Change proposes to **convert some industrial uses to commercial to and regional-serving uses**.

5. The fifth Major Area of Change aims to **promote transit-oriented development**.

6. The sixth Major Area of Change aims to **continue development in the Downtown area**.

7. The seventh Major Area of Change aims to **promote infill and redevelopment to support transit**.

8. The eighth Major Area of Change aims to **revitalize the Belmont Pier Complex and Alamitos Bay to their "highest and best use."**

The identification of these Major Areas of Change reflects the City's desire to address land use issues primarily within these areas of the City.

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 (refer to Table 3.B, Anticipated

General Plan Build-Out Summary, and Section 4.6, Population and Housing, for further information related to 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.

3.5.2 Overview of the Land Use Element

Overall, the proposed LUE would allow for a greater mix of land uses throughout the City through the establishment of PlaceTypes in place of standard parcel-by-parcel land use designations. The proposed PlaceTypes would allow for greater flexibility in development types to create distinct residential neighborhoods, employment centers, and open space areas. The proposed LUE would also 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.

3.5.3 Changes from the 2016 LUE to the 2018 LUE

As discussed previously, a Draft EIR was previously circulated for an extended period of 78 days, from September 1, 2016, to November 18, 2016. Based on comments received during the Draft EIR public review period, the City Council directed staff to hold additional community meetings and revise the project to address concerns related to height, density, additional housing units, and traffic. Through changes in allowable building height and PlaceType designations, the revised LUE addresses community concerns raised during the Draft EIR public review period. Also in response to community comments and concerns, several policy changes from the 2016 LUE were made to the 2018 LUE.

3.5.3.1 PlaceType Designations

Figures 3.7.a through 3.7.e show parcels within the City that changed PlaceType designations when comparing the 2016 LUE to the 2018 LUE. The figures shows how PlaceType designations have been revised from the December 2016 version to the March 2018 version of the LUE. The PlaceType labels shown directly on the figures indicate designations from the December 2016 version of the LUE. The colors shown on the map indicate designations from the March 2018 version of the LUE and can be interpreted in the map's legend. Changes to PlaceTypes were varied throughout the City and are described below.

As shown in Figure 3.7.b, the largest acreages of change in the North Long Beach area PlaceTypes were primarily changed from Industrial to Neo-Industrial. Other similar area changes among North Long Beach PlaceTypes were varied; many were changed to Neighborhood-Serving Center or Corridor – Low and Moderate and Multi-Family Residential – Low and Moderate. In the Bixby Knolls area, Placetypes were primarily changed from Neighborhood-Serving Center or Corridor to Founding and Contemporary Neighborhoods, representing a decrease in density. Changes from Community Commercial to Neighborhood-Serving Center or Corridor – Low and Moderate were also common in Bixby Knolls.

As shown in Figure 3.7.c, the Westside and Wrigley area PlaceTypes were changed to reflect more Founding and Contemporary Neighborhoods overall. In addition, Multi-Family Residential – Low PlaceTypes were changed to the Neighborhood-Serving Center or Corridor – Low PlaceType. The Central area primarily had various PlaceTypes changed to the Neighborhood-Serving Center or Corridor – Moderate PlaceType. The Midshore area primarily had changes from Multi-Family Residential – Low to Multi-Family Residential – Moderate, thereby increasing density. In other Midshore areas, PlaceTypes changed from Neighborhood-Serving Center or Corridor – Moderate to Neighborhood-Serving Center or Corridor – Low, thereby reducing density. Negligible changes were made to the Downtown area.

As shown in Figure 3.7.d, there were varied changes in PlaceType in the Traffic Circle area, including changes from Community Commercial to Neighborhood-Serving Center or Corridor – Low and Moderate, changes from Neighborhood-Serving Center or Corridor – Low to Community Commercial, and changes from Multi-Family Residential – Moderate to Multi-Family Residential – Low and Founding and Contemporary Neighborhood. Changes in the Southeast area were minimal, but overall reflective of reducing proposed densities: PlaceType changes were made from Neighborhood-Serving Center or Corridor – Moderate to Neighborhood-Serving Center or Corridor – Low, and from Multi-Family Residential – Moderate to Multi-Family Residential – Low.

In the Eastside neighborhood, a majority of the changes were made to reflect more Community Commercial PlaceTypes (refer to Figure 3.7.e). In addition, more Multi-Family Residential PlaceTypes are represented along the periphery of the Eastside area.

3.5.3.2 Building Heights

Figures 3.8.a through 3.8.e show parcels within the City where building heights were changed when comparing the 2016 LUE to the 2018 LUE. The building height labels shown directly on the figure indicate how maximum allowable building heights have changed from the December 2016 to the March 2018 versions of the LUE. The colors shown on the figure indicate whether the change involved a reduction or an increase in building height and can be interpreted in the map's legend. As illustrated by Figures 3.8.a through 3.8.e, heights were primarily lowered along the coast and within the Wrigley, Traffic Circle, Southeast, and Eastside Districts. In contrast, heights were increased in the Central area, as well as along primary arterials and existing Industrial areas throughout the City.

3.5.3.3 LUE Policies

Several policies were amended or added from the 2016 LUE to the 2018 LUE. Many of the changes were technical fixes, clarifications, or new policies requested by various stakeholders. Where applicable, these updated and/or new policies have been added to relevant sections of this Recirculated Draft EIR. The following list summarizes the policy changes that were implemented:

- At the request of community members, several new policies were added around environmental justice and equity, including stronger language around Green Zones and policies facilitating collaboration with the City's Office of Equity.
- At the request of community members, policies were added to promote sustainable design and planning practices.

- At the request of community members, a policy was added to locate schools and other sensitive receptors at least 500 ft away from freeways.
- At the request of a local US Navy contact, policies were added to better ensure collaboration between the City and the Seal Beach U.S. Naval Weapons Station.
- Policies were added to better strengthen the City's fiscal health and align economic development.
- Policies were added to reflect the City's intent to support development and preservation of affordable housing.
- Policies were added to promote and accommodate all modes of travel and reduce Vehicle Miles Traveled in accordance with the State's guidelines.
- Policies were added to strengthen and improve the City's current practice of coordinating and consulting with Native American Tribes during the planning process.
- Policies were added that focus on community needs and resources for students.
- Policies were added to create incentives for grocery store development.
- Policies were added related to natural resource protection.
- In addition, implementation programs were added to support new policies and strengthen policy direction.

3.5.4 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 (see Figures 3.9.a and 3.9.b, Urban Design Principles in Commercial and Residential Areas, respectively). 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.

3.5.4.1 Overview of the Urban Design Element

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.

3.5.5 Changes from the 2016 UDE to the 2018 UDE

In order to address the aforementioned changes made in the currently proposed LUE, the proposed UDE has incorporated similar changes related to PlaceType designations and building heights. In addition, several policy changes were implemented from the 2016 LUE to the 2018 LUE. Through changes in allowable building height and PlaceType designations, the UDE addresses community concerns raised during the Draft EIR public review period related to height, density, additional housing units, and traffic.

3.5.5.1 UDE Policies and Textual Revisions

Several textual changes and policy changes in the 2018 UDE were made in response to changes made to the proposed 2018 LUE from the 2016 LUE. The majority of these changes were technical fixes, clarifications, and/or new text/policies in response to requests made by various stakeholders. Where applicable, updated text and policies from the 2018 UDE have been added to relevant sections of this Recirculated Draft EIR. The following list summarizes the policy changes that were implemented:

- At the request of community members, several new policies were added to encourage the creation of "complete neighborhoods" defined by a balance of housing, goods, and services, and amenities for all income levels and age groups.
- At the request of community members, policies were also added to ensure that new projects subject to Site Plan review would be analyzed for consistency with applicable provisions of the UDE.
- Policies were added to encourage sidewalk dining, parklets, and other public amenities that would enhance the character of the "public room" along roadways.

- Text was added to provide definitions of Streetscapes, Planting and Amenity Zones, Walk Zones, and Dining and Display Zones.

3.5.6 Anticipated General Plan Build Out (2040)

Socioeconomic growth projections associated with approval of the proposed LUE are used throughout this Recirculated Draft EIR to estimate the maximum expected development that could occur as a result of the anticipated General Plan build out scenario (horizon year of 2040) as compared to existing 2012 conditions.[1] The following discussion outlines how demographic growth projections associated with the proposed LUE were developed and provides context on how these projections correlate to land use changes outlined in the proposed LUE.

3.5.6.1 Background of Demographic Growth Projections for the City

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 18,320 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. 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

[1] Data for the year 2012 were utilized to represent existing demographic and socioeconomic conditions, as 2012 is the most current year for which SCAG and the Department of Finance (DOF) have information related to population, housing, and employment for the City of Long Beach. Throughout the Recirculated EIR in other topic areas, the existing conditions were revised with more updated data whenever they were available.

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, the anticipated General Plan build out (2040) scenario includes the following quantities of demographic data growth. Throughout this EIR, "project build out", "build out", or "anticipated buildout" refers to the scenario described below:

- 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

3.5.6.2 Distribution and Allocation of Growth

Current trends related to overcrowding indicate that population growth is likely to occur whether or not it is planned for in City. PlaceType designations outlined in the proposed LUE have some effect on the location of housing and places of employment. Many of the proposed PlaceTypes accommodate existing Specific Plans that have been adopted by the City, such as the Downtown Plan, Midtown Specific Plan, Douglas Park Rezone Project, and Southeast Area Specific Plan. Under the proposed LUE, neighborhoods with previously 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 (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). 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. As stated previously, 13,403 new housing units are accommodated in recently approved specific plans.

The remainder of the City's projected growth is expected to occur outside of the Specific Plan areas and is likely to occur based on the approved density levels associated with each of the proposed PlaceTypes. For example, the Founding and Contemporary Neighborhood PlaceTypes are anticipated to experience a 2 percent housing increase, a 0.5 percent increase in population, and a 1 percent increase in employment over baseline conditions by 2040. Refer to the *Socioeconomic Methodology Memorandum* (LSA 2019; included as Appendix E) for further discussion regarding the allocation of future growth in the City through 2040.

[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).

3.5.6.3 Demographic Growth Projections

As illustrated by Table 3.B, Anticipated General Plan Build-Out Summary, the proposed LUE would allow for a population increase of up to 18,230 persons, an employment increase of up to 28,511 jobs, and a net increase of up to 28,524 housing units by the horizon year 2040**.** Specifically, the proposed project would allow for an increase in 1,274 and 27,250 single-family and multi-family units, respectively, and an increase of 13,542,617 sf of non-residential uses; see Table 3.C, 2012 Citywide Housing Units and Non-Residential Square Footage, and Table 3.D, Anticipated General Plan Build-Out (2040) Housing Units and Non-Residential Square Footage. The projected increases in population and employment are consistent with growth projections for the City included in SCAG's 2016 RTP/SCS. The project-related increase in housing units is greater than SCAG projections, but is consistent with the number of housing units that were determined to be required in the City as part of the RHNA process and the Assessment of Fair Housing.

3.5.7 Project Summary

The proposed project includes the approval of an updated LUE and a new UDE for incorporation into the City's General Plan. Although the project proposes to replace the existing LUE and adopt a new UDE, future project-specific design details facilitated by approval of these General Plan elements are unknown at this time. The proposed project involves the adoption of citywide programmatic policy documents; future project-specific actions would be subject to further environmental review and the regulations contained in the adopted General Plan. As such, the following individual development components would be finalized on a project-by-project basis following approval of the proposed project:

- Type of use and number of units/square footage
- Circulation plan and number of parking spaces
- Building design and finalized site plan
- Lighting and landscaping
- Project design features
- Conservation and sustainability features
- Phasing and construction information

Following approval of the proposed project, the future physical improvements associated with changes in the LUE and UDE would be subject to further review on a project-specific basis. In other words, each future discretionary project would be subject to a project-level CEQA review 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 at a programmatic level, not for a project-specific development or for any specific proposal.

Table 3.B: Anticipated General Plan Build-Out Summary

PlaceTypes	Housing Units			Population			Employment		
	2012	2040	Δ	2012	2040	Δ	2012	2040	Δ
Open Space[1]	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	3,496	0	7,193	7,442	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[1]**	**466,255**	**484,485**	**18,230**	**153,154**	**181,665**	**28,511**
SCAG Totals	**163,800**	**175,500**	**11,700**	**466,300**	**484,500**	**18,200**	**153,200**	**181,700**	**28,500**

Source: *Methodology for Calculating Growth in Socioeconomic Data Associated with the Long Beach General Plan Land Use Element* (January 2, 2019) (Appendix E).
Note: Future forecasted values are estimates and may not be exact where Specific Plan or Traffic Analysis Zone boundaries overlap multiple PlaceTypes.
[1] Marinas are included in the Open Space PlaceType. Marinas not only include small-scale uses (such as concession stands), but also other beach serving uses (such as boat repair facilities, and off-shore oil wells, etc.) that generate employment.
SCAG = Southern California Association of Governments

Table 3.C: 2012 Citywide Housing Units and Non-Residential Square Footage

PlaceTypes	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**

Source: MIG (March 2016).

Table 3.D: Anticipated General Plan Build-Out (2040) Housing Units and Non-Residential Square Footage

PlaceTypes	Residential Units			Non-Residential Building Square Footage				
	Single Family	Multi-Family	Total	Commercial	Office	Industrial	Public Facilities/ Institutional	Total
Open Space[1]	-	-	-	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***

Source: *Methodology for Calculating Growth in Socioeconomic Data Associated with the Long Beach General Plan Land Use Element* (January 2, 2019) (Appendix E).
Note: Future forecasted values are estimates and may not be exact where Specific Plan or Traffic Analysis Zone boundaries overlap multiple PlaceTypes.
[1] Marinas are included in the Open Space PlaceType. Marinas not only include small-scale uses (such as concession stands), but also other beach serving uses (such as boat repair facilities, and off-shore oil wells, etc.) that have non-residential square footage.
Δ = change
EIR = Environmental Impact Report

3.6 PROJECT DESIGN FEATURES

PDFs are specific components of the proposed project that have been incorporated to reduce potential environmental effects. Because the proposed project is a programmatic policy document, the PDF is also a programmatic program. This PDF is a part of the project design, and does not constitute a mitigation measure. It is, however, included in this Recirculated Draft EIR because it is a significant part of the project proposal to reduce potential project impacts. In addition to being listed below, PDFs are also described in the relevant sections of Chapter 4.0 for reduction of environmental effects of the proposed project. PDFs are not included for each environmental topic.

Project Design Feature 4.4.1: To ensure that the proposed project complies with and would not conflict with or impede the City of Long Beach (City) Zoning Code, the project shall implement a Zone Change Program and Local Coastal Program (LCP) update to ensure that changes facilitated by the adopted Land Use Element (LUE) are consistent with the Zoning Code and LCP. The Zone Change Program and LCP update shall be implemented to the satisfaction of the City Director of Development Services, or designee, and shall include the following specific performance criteria to be implemented within 5 years from the date of project approval:

- **Year 1:** Within the first 12 months following project approval, all Land Use Element/Zoning Code/LCP inconsistencies shall be identified and mapped. The City shall evaluate these inconsistencies and prioritize areas needing intervention.
- **Year 2:** Following the identification and mapping of any zoning and LCP inconsistencies, the City shall, within 24 months following project approval, begin processing zone changes, zone text amendments, and LCP updates in batches, as required to ensure that the Zoning Code and LCP are consistent with the adopted LUE.
- **Year 3:** The City shall, within 36 months following project approval, begin drafting new zones, or begin preparation of a comprehensive Zoning Code and LCP update, to better reflect the PlaceTypes identified in the adopted LUE.
- **Year 5:** All zoning and LCP inconsistencies shall be resolved through mapping and text amendments by the end of the fifth year following project approval. The City shall also submit the updated LCP to the California Coastal Commission (CCC) for consideration and approval by the end of the fifth year following project approval.

3.7 PROJECT OBJECTIVES

The City has established the following intended objectives, which would aid decision-makers in their review of the project and its associated environmental impacts:

1. Promote livability, including environmental quality, community health, and safety, the quality of the built environment, and economic vitality.

2. Meet the City's housing needs as identified in the and Regional Housing Needs Assessment Requirement (7,048 new dwelling units by the year 2021) and the Assessment of Fair Housing (21,476 housing units to address existing housing needs) by diversifying housing opportunities through the provision of a variety of housing types and the provision of market-rate and affordable housing units.

3. Accommodate strategic growth in the Downtown area, around regional-serving facilities, along major corridors, and in transit-oriented development areas; create and preserve open space; accommodate economic development by converting industrial areas to neo-industrial uses in appropriate locations, promote regional-serving uses, convert industrial uses to commercial uses in locations more suitable for commercial character, and revitalize the Waterfront areas.

4. Implement sustainable planning and development practices by creating compact new developments and walkable neighborhoods to minimize the City's contribution to greenhouse gas emissions (GHGs) and energy usage.

5. Create job growth allowing for new businesses while also maintaining and preserving existing employment opportunities at the City's regional facilities and employment centers. Promote increased employment opportunities for Long Beach residents at differing levels of educational and skill attainment.

6. Promote changes in land use and development that reflect changes in the regional economy. Promote land uses that transform now-vacant or under-utilized former employment centers into new sources of employment.

7. Provide high-quality housing in a variety of forms, sizes, and densities to serve the diverse population of the City.

8. Preserve low-density neighborhoods while improving pedestrian, bicycle, and transit access in these areas.

9. Ensure fair and equitable land use by making planning decisions that would ensure the fair and equitable distribution of services, amenities, and investments throughout the City.

10. Provide reliable public facilities and infrastructure by expanding and maintaining the current infrastructure to serve new and existing developments in the City.

11. Increase access to green and open space through the creation of urban open spaces and greenscapes and providing for clean beaches, waterways, preserves, and parklands.

12. Restore and reconnect with local natural reserves through the utilization of clean energy, best management practices (BMPs), and current technologies.

13. Create "Great Places" places by improving the connectivity, the visual appearance of and development of public spaces; promote sustainable design practices; encourage design techniques that foster economic development; preserve historic districts and the unique character of each neighborhood; provide for public art; and expand the unified sign program to increase wayfinding within neighborhoods and PlaceTypes.

14. Improve the urban fabric by creating complete neighborhoods and community blocks, properly place and design new development to prevent visual and land use conflicts; promote compact urban and infill development, clearly define boundaries between natural and urbanized areas, preserve iconic buildings; and provide pedestrian furniture and wide sidewalks to create walkable blocks.

15. Preserve the City's natural features, open space, and parks throughout the City, while also providing new public spaces throughout the community, parks, and plazas at infill sites, and parklets along sidewalks, particularly in areas with the least access to greenspace.

16. 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.

17. Promote high-quality design of the built environment. Enhance visual interest, improve functionality, and inspire pride through thoughtful design, high-quality materials, and a diversity of architectural styles throughout neighborhoods and the entire City.

In addition to these 17 objectives, both the LUE and the UDE contain numerous goals, implementation strategies, and policies to guide the use of land, urban form, and the aesthetic character of the City. These citywide policies aim to provide a holistic and comprehensive guide for the City, whereas future projects facilitated by project approval would provide a refined direction for distinct areas within the City.

3.8 DISCRETIONARY ACTIONS, PERMITS, AND OTHER APPROVALS

This Recirculated Draft Program EIR analyzes and documents the environmental impacts of the proposed project and all discretionary actions associated with the project. Refer to Chapter 2.0, Introduction, for a discussion of the uses of this Program EIR. In accordance with Sections 15050 and 15367 of the *State CEQA Guidelines*, the City is the designated Lead Agency for the proposed project and has principal authority and jurisdiction for CEQA actions and project approval. Responsible Agencies are those agencies that have jurisdiction or authority over one or more aspects associated with the development of a proposed project and/or mitigation. Trustee Agencies are State agencies that have jurisdiction by law over natural resources affected by a proposed project.

The legislative and discretionary actions to be considered by the City as a part of the proposed project include:

- **General Plan Update/Amendment:** The project would require approval to replace the existing General Plan LUE with a new LUE that would result in a citywide redesignation of land uses. The project would also require approval to replace the existing General Plan SRE with the proposed UDE.
- **Local Coastal Program Amendment:** The project would require future amendments to the LCP at the time individual applications for development within the City's Coastal Zone are proposed.
- **Rezone Amendment:** The proposed LUE would require a future rezone amendment to update the City's Zoning Code and Zoning Map to resolve potential zoning inconstancies resulting from adoption of the proposed PlaceTypes. As discussed further above, the City would comply with a Zone Change Program as part of Project Design Feature 4.4.1, which would include Rezone Amendments for all zoning inconsistencies resulting from adoption of the proposed land use plan.

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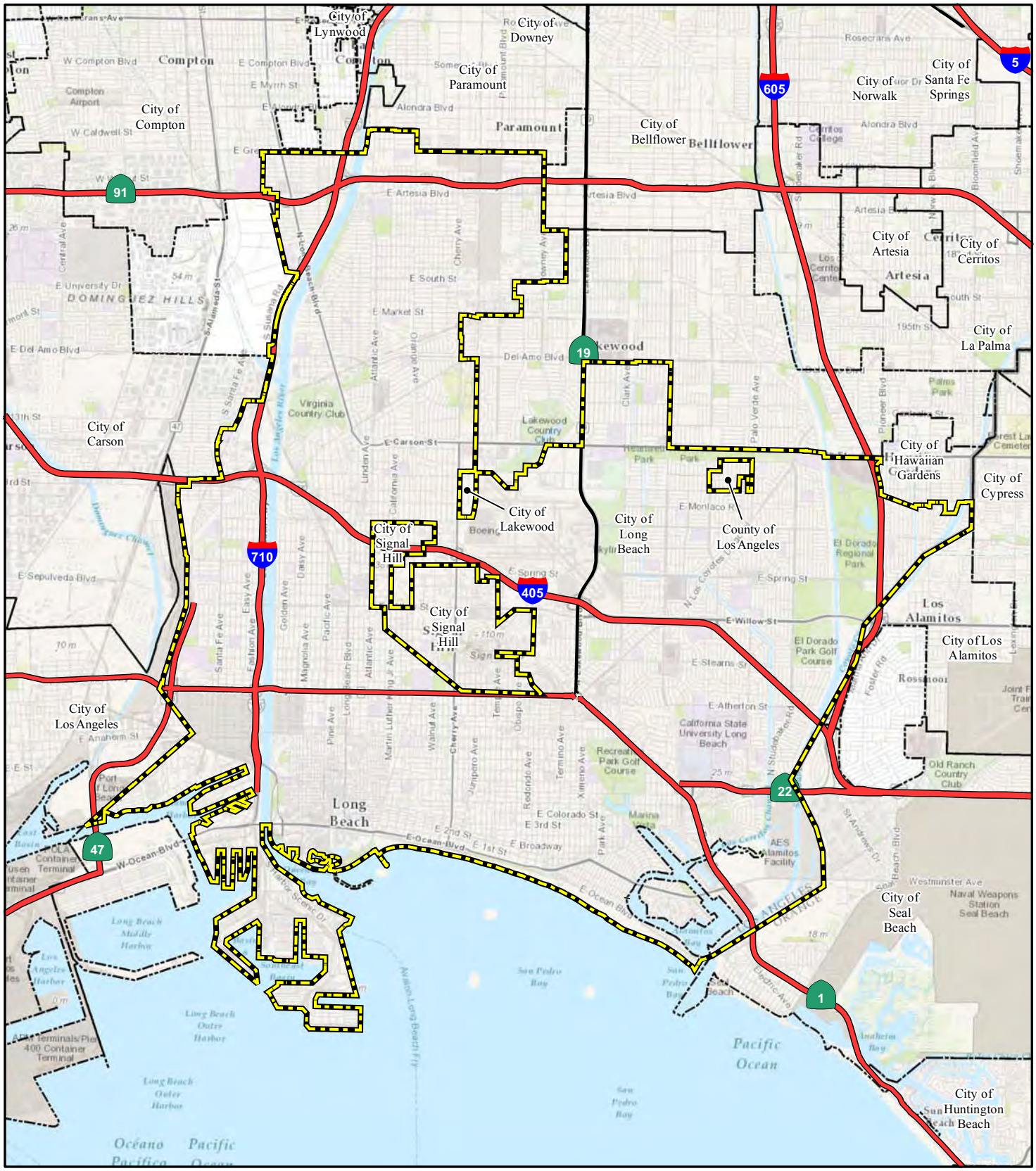

LSA

LEGEND

Project Area (City of Long Beach)

FIGURE 3.1

N

0 1 2
MILES

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

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Long Beach General Plan
Land Use and Urban Design Elements

Project Location

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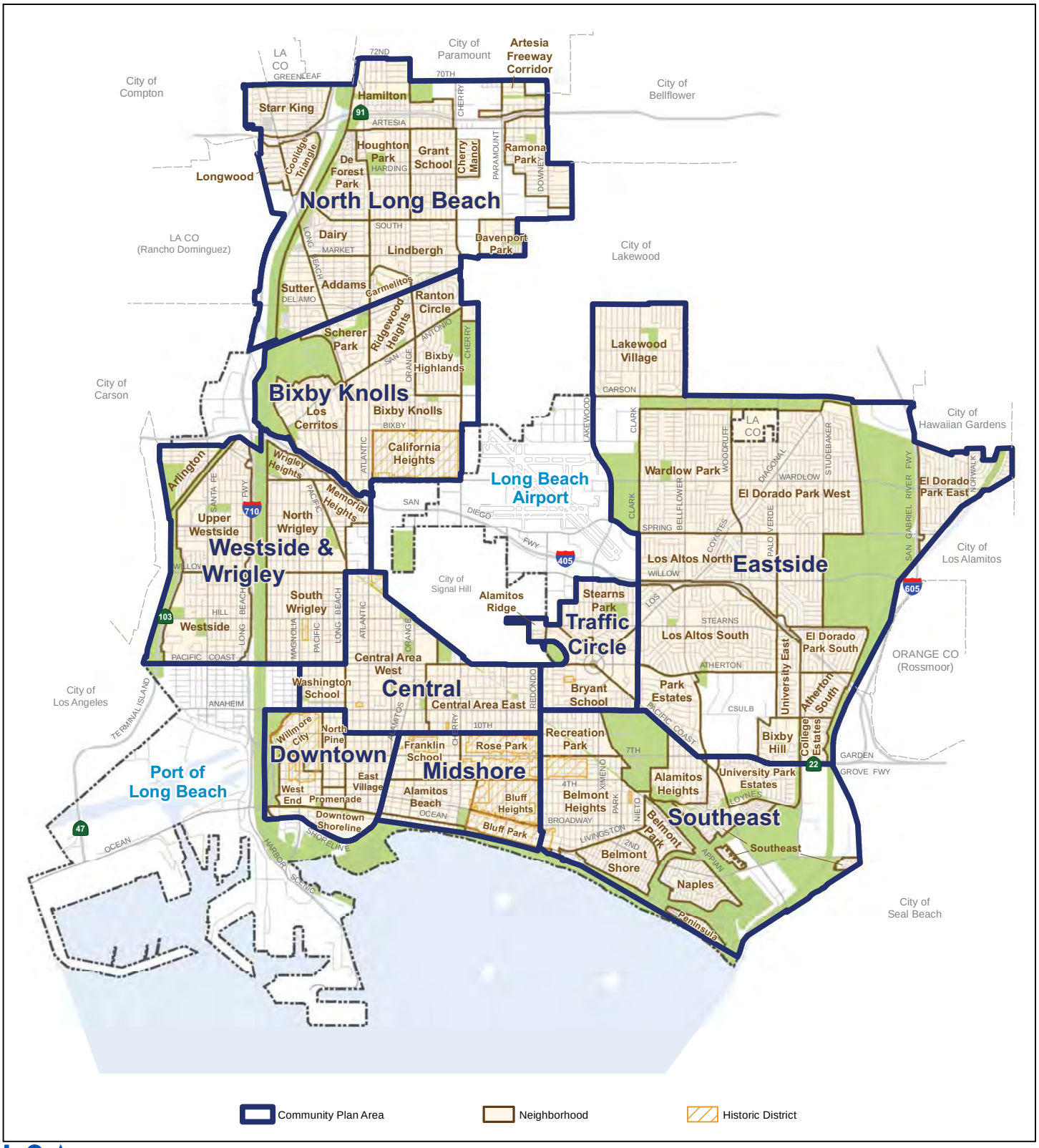

LSA

FIGURE 3.2

N

0 0.75 1.5
MILES

SOURCE: Proposed Land Use Element, City of Long Beach, August 2016

General Plan Land Use and Urban Design Elements

Community Plan Areas

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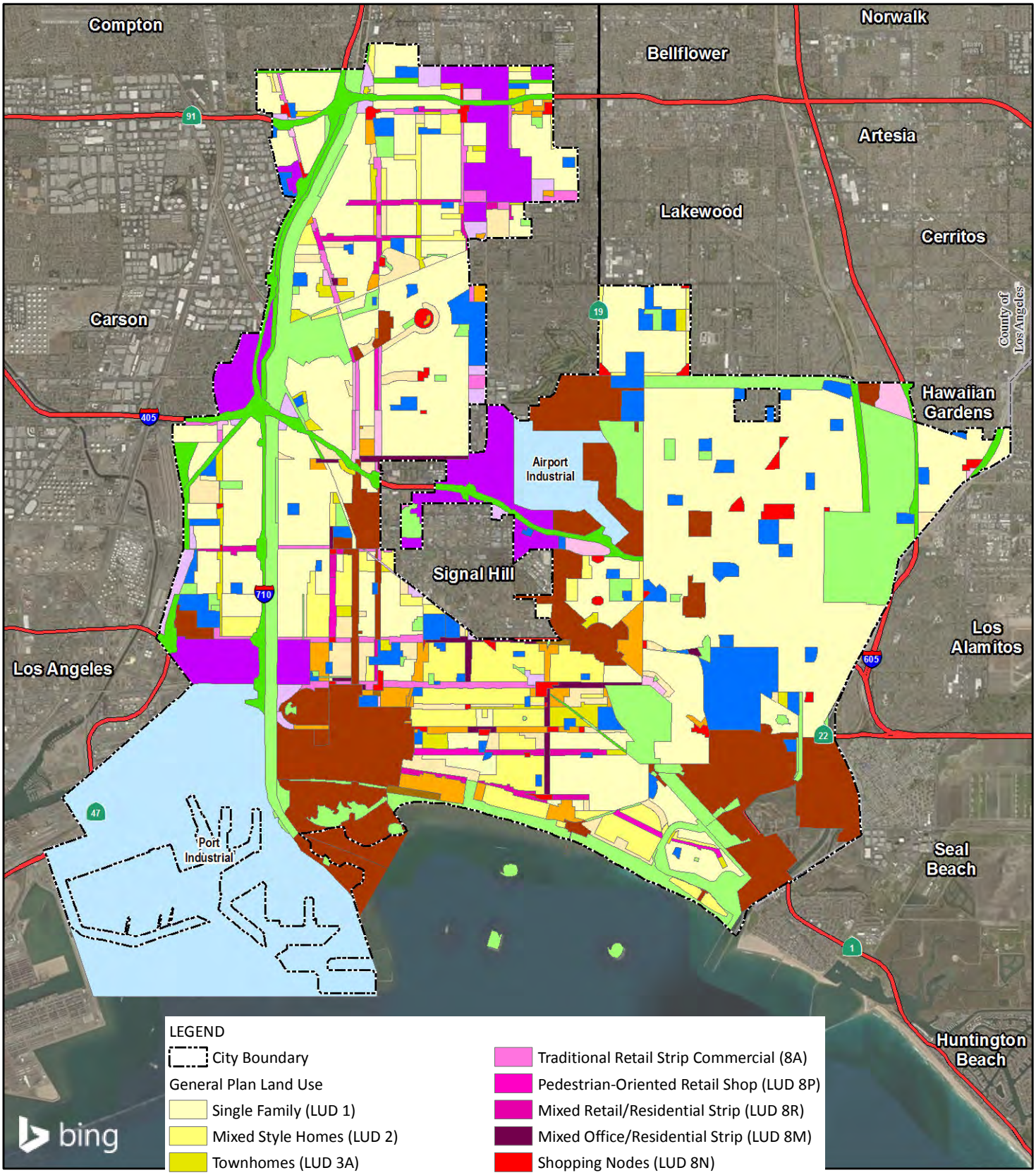

LEGEND

- City Boundary

General Plan Land Use

- Single Family (LUD 1)
- Mixed Style Homes (LUD 2)
- Townhomes (LUD 3A)
- Moderate Density Residential (3B)
- High Density Residential (LUD 4)
- Urban High Density Residential (LUD 5)
- High Rise Residential (LUD 6)
- Mixed Uses (LUD 7)
- Major Commercial Corridor (LUD 8)
- Traditional Retail Strip Commercial (8A)
- Pedestrian-Oriented Retail Shop (LUD 8P)
- Mixed Retail/Residential Strip (LUD 8R)
- Mixed Office/Residential Strip (LUD 8M)
- Shopping Nodes (LUD 8N)
- Restricted Industry (LUD 9R)
- General Industry (LUD 9G)
- Institutions/Schools (LUD 10)
- Open Space/Parks (LUD 11)
- Harbor/Airport (LUD 12)
- Right-of-Way (LUD 13)

LSA

FIGURE 3.3

N

0 0.75 1.5
MILES

Long Beach General Plan
Land Use and Urban Design Elements

Existing General Plan (1989) Land Use Map

SOURCE: Bing Maps (2018); City of Long Beach (1989)

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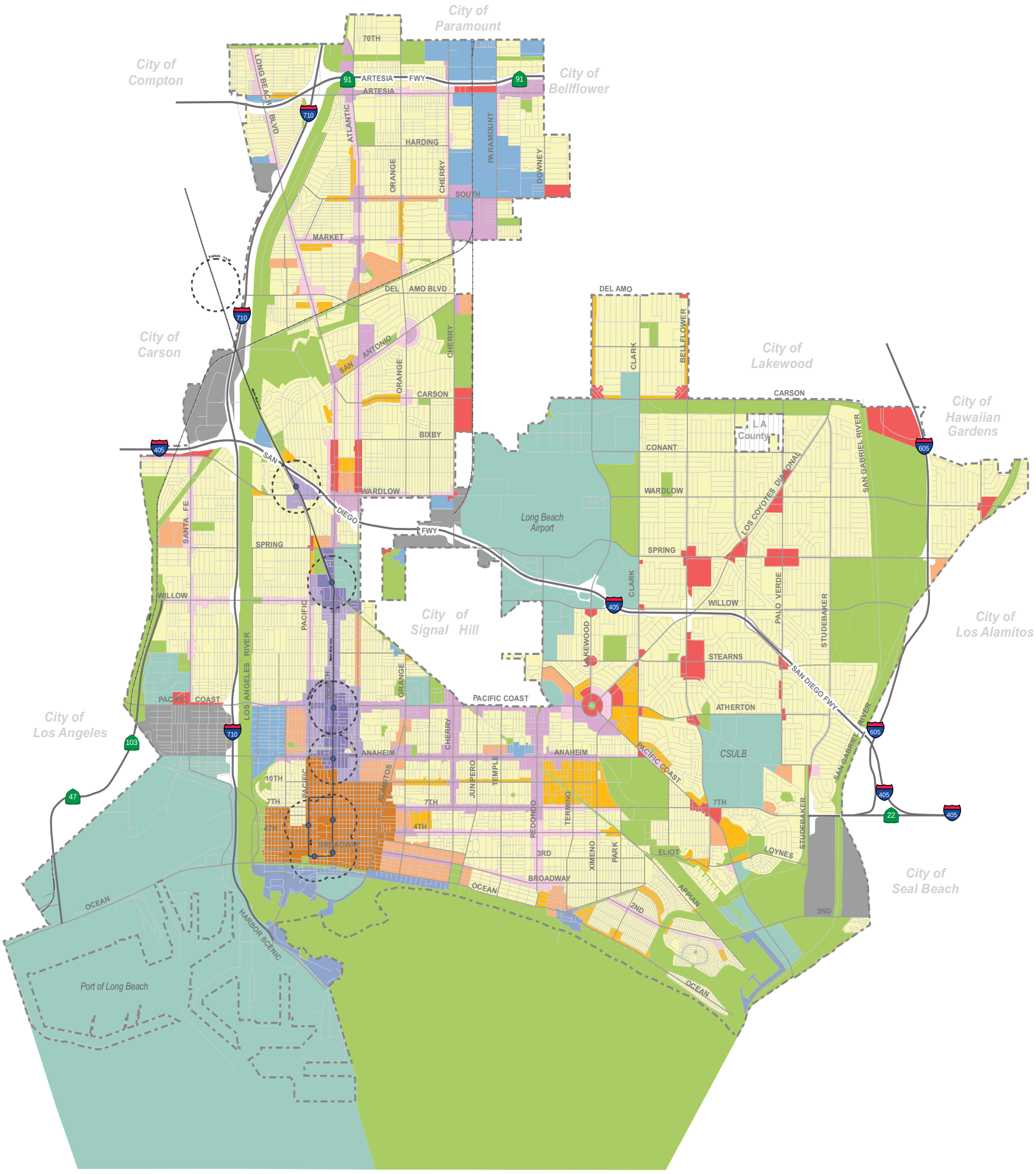

Legend

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 3.4

Long Beach General Plan
Land Use and Urban Design Elements

Project PlaceTypes

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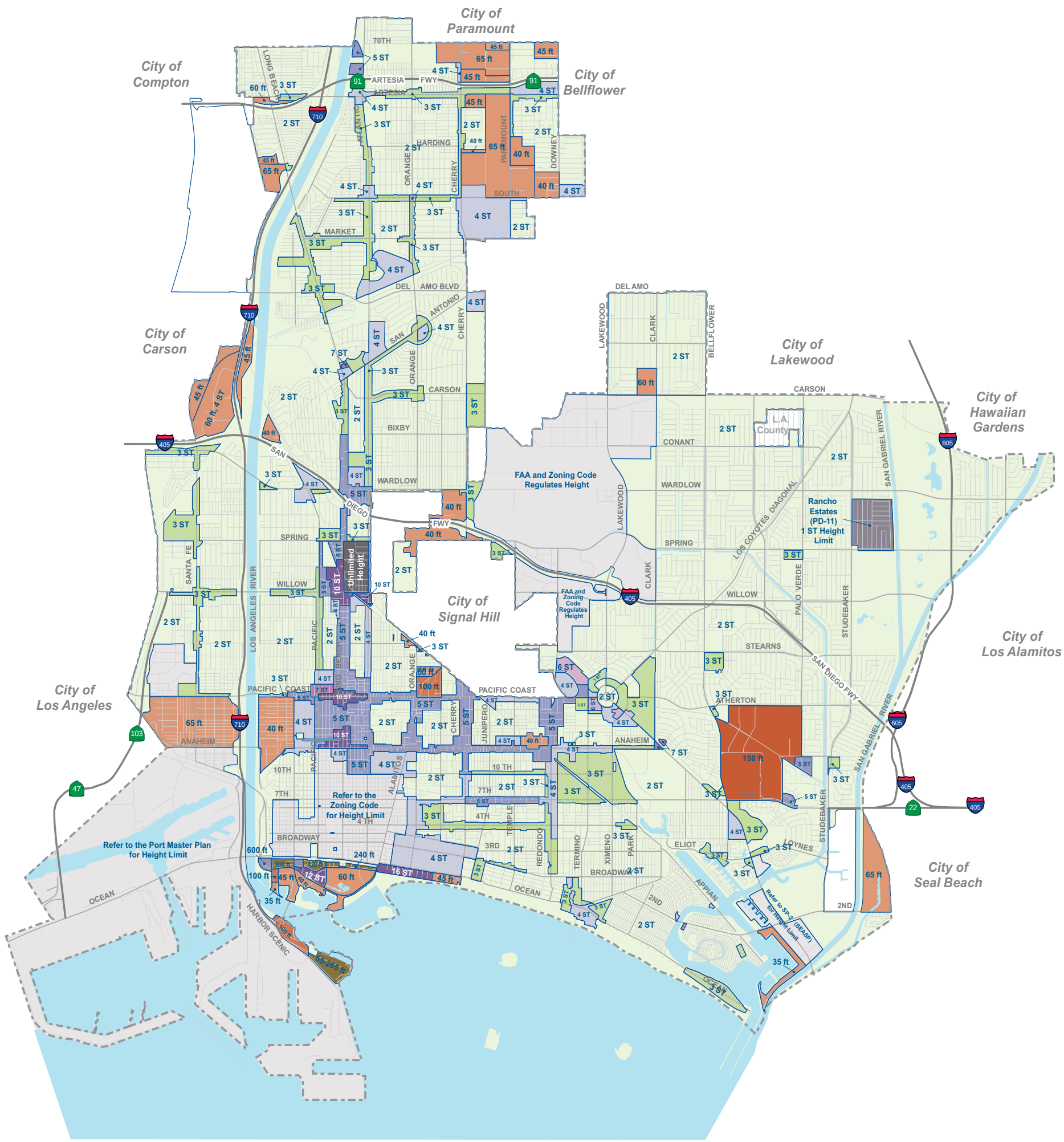

Legend

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

FIGURE 3.5

Long Beach General Plan
Land Use and Urban Design Elements
PlaceType Height Limitations

SOURCE: Proposed Land Use Element, City of Long Beach, March 2018

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LSA

FIGURE 3.6

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

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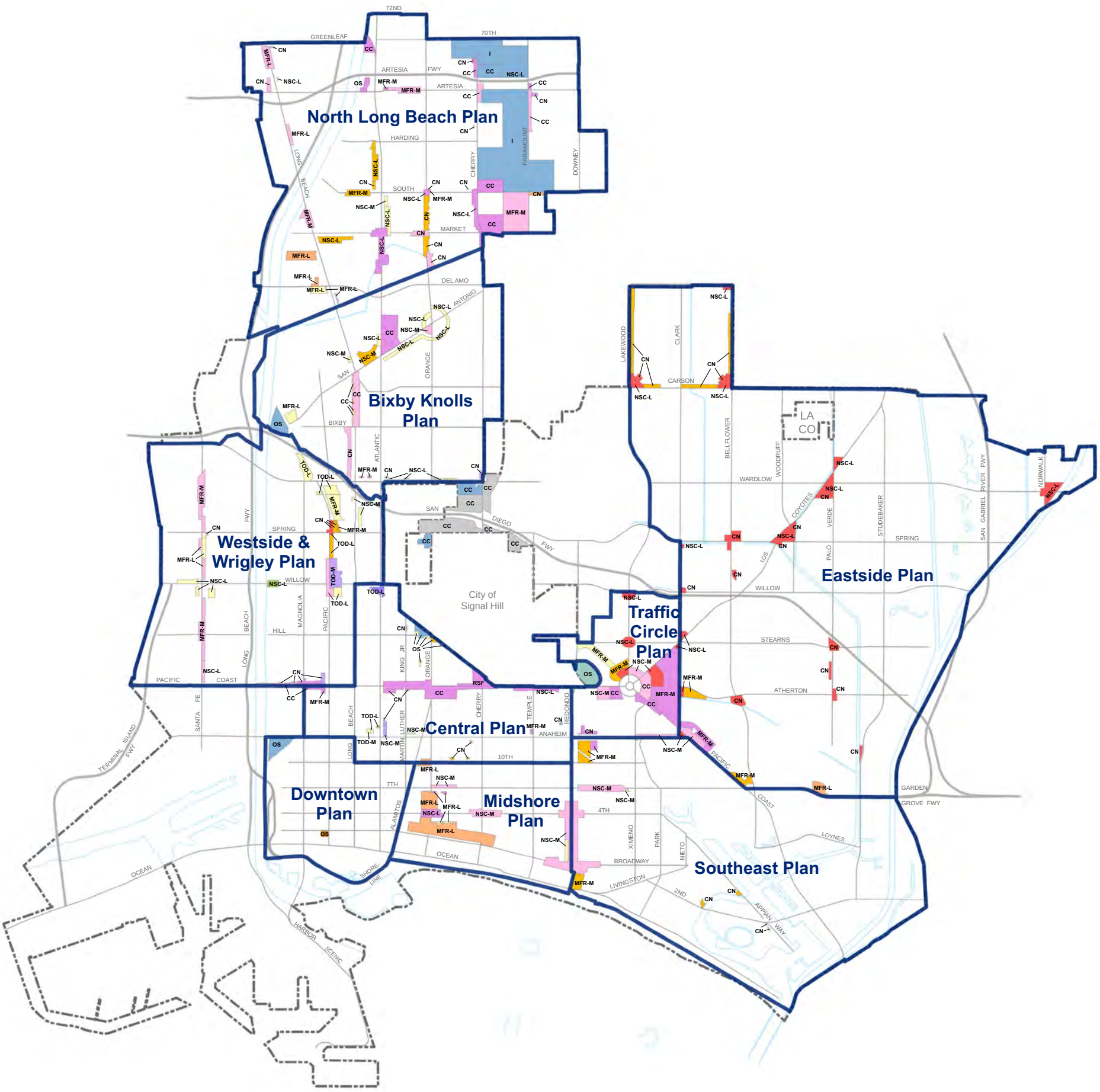
* This map shows how PlaceType designations have changed from the August 2016 to the March 2018 versions of the Land Use Element (LUE). The PlaceType labels (in lettering) shown directly on the map indicate designations fromthe August 2016 version of the LUE. The colors shown on the map indicate designations from the March 2018 version of the LUE and can be interpreted in the Legend.



PLACETYPE

- Community Commercial - CC
- Founding and Contemporary Neighborhood (Single Family and Low Density) - N
- Downtown - DT
- Industrial - I
- Multiple Family Residential Low Density - MFR-L
- Multiple Family Residential Moderate Density - MFR-M
- Neo Industrial - NI
- Community Plan Area
- Neighborhood Serving Center or Corridor Low Density - NSC-L
- Neighborhood Serving Center or Corridor Moderate Density - NSC-M
- Open Space - OS
- Regional Serving Facility - RSF
- Transit-Oriented Development Low Density - TOD-L
- Transit-Oriented Development Moderate Density - TOD-M
- Waterfront - WF

LSA

FIGURE 3.7a

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare PlaceTypes by Community Plan Area: 2016 to 2018

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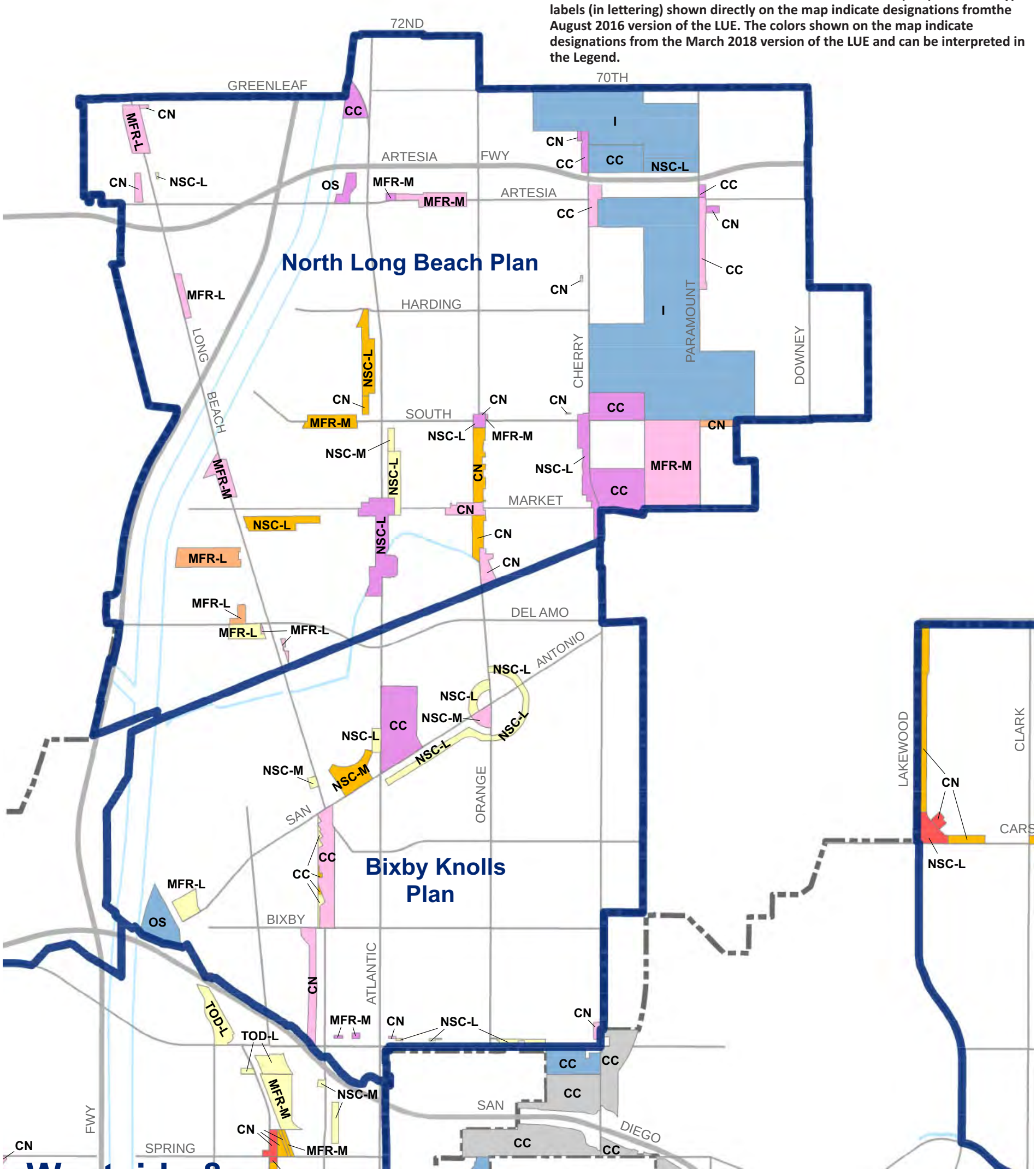
* This map shows how PlaceType designations have changed from the August 2016 to the March 2018 versions of the Land Use Element (LUE). The PlaceType labels (in lettering) shown directly on the map indicate designations fromthe August 2016 version of the LUE. The colors shown on the map indicate designations from the March 2018 version of the LUE and can be interpreted in the Legend.



PLACETYPE

- Community Commercial - CC
- Founding and Contemporary Neighborhood (Single Family and Low Density) - N
- Downtown - DT
- Industrial - I
- Multiple Family Residential Low Density - MFR-L
- Multiple Family Residential Moderate Density - MFR-M
- Neo Industrial - NI
- Community Plan Area
- Neighborhood Serving Center or Corridor Low Density - NSC-L
- Neighborhood Serving Center or Corridor Moderate Density - NSC-M
- Open Space - OS
- Regional Serving Facility - RSF
- Transit-Oriented Development Low Density - TOD-L
- Transit-Oriented Development Moderate Density - TOD-M
- Waterfront - WF

LSA

FIGURE 3.7b

N

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE PlaceTypes: 2016 to 2018 - North Long Beach and Bixby Knolls

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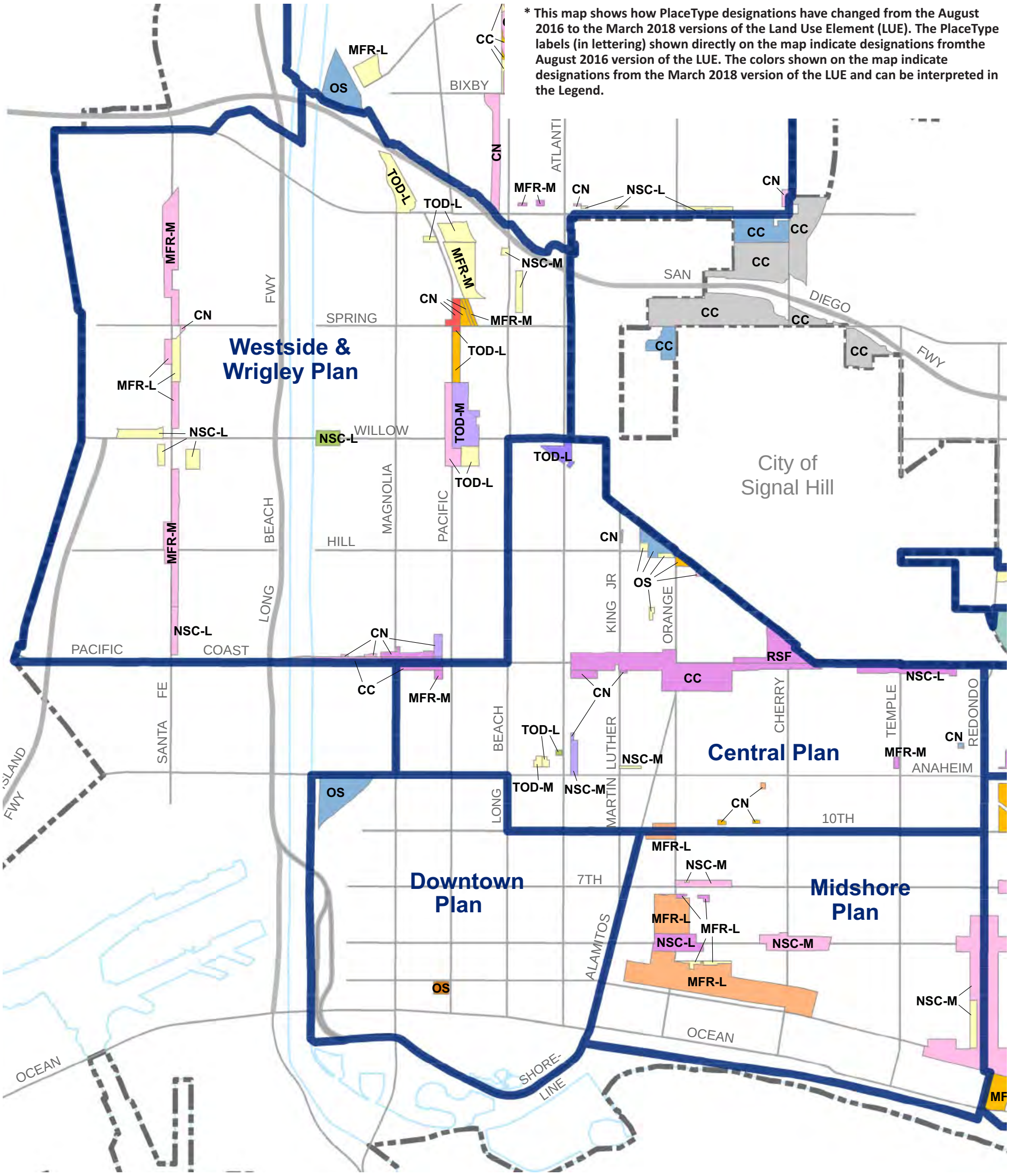

PLACETYPE

- Community Commercial - CC
- Founding and Contemporary Neighborhood (Single Family and Low Density) - N
- Downtown - DT
- Industrial - I
- Multiple Family Residential Low Density - MFR-L
- Multiple Family Residential Moderate Density - MFR-M
- Neo Industrial - NI
- Community Plan Area
- Neighborhood Serving Center or Corridor Low Density - NSC-L
- Neighborhood Serving Center or Corridor Moderate Density - NSC-M
- Open Space - OS
- Regional Serving Facility - RSF
- Transit-Oriented Development Low Density - TOD-L
- Transit-Oriented Development Moderate Density - TOD-M
- Waterfront - WF

LSA

FIGURE 3.7c

N

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE PlaceTypes: 2016 to 2018 - Westside & Wrigley, Central, Downtown, and Midshore

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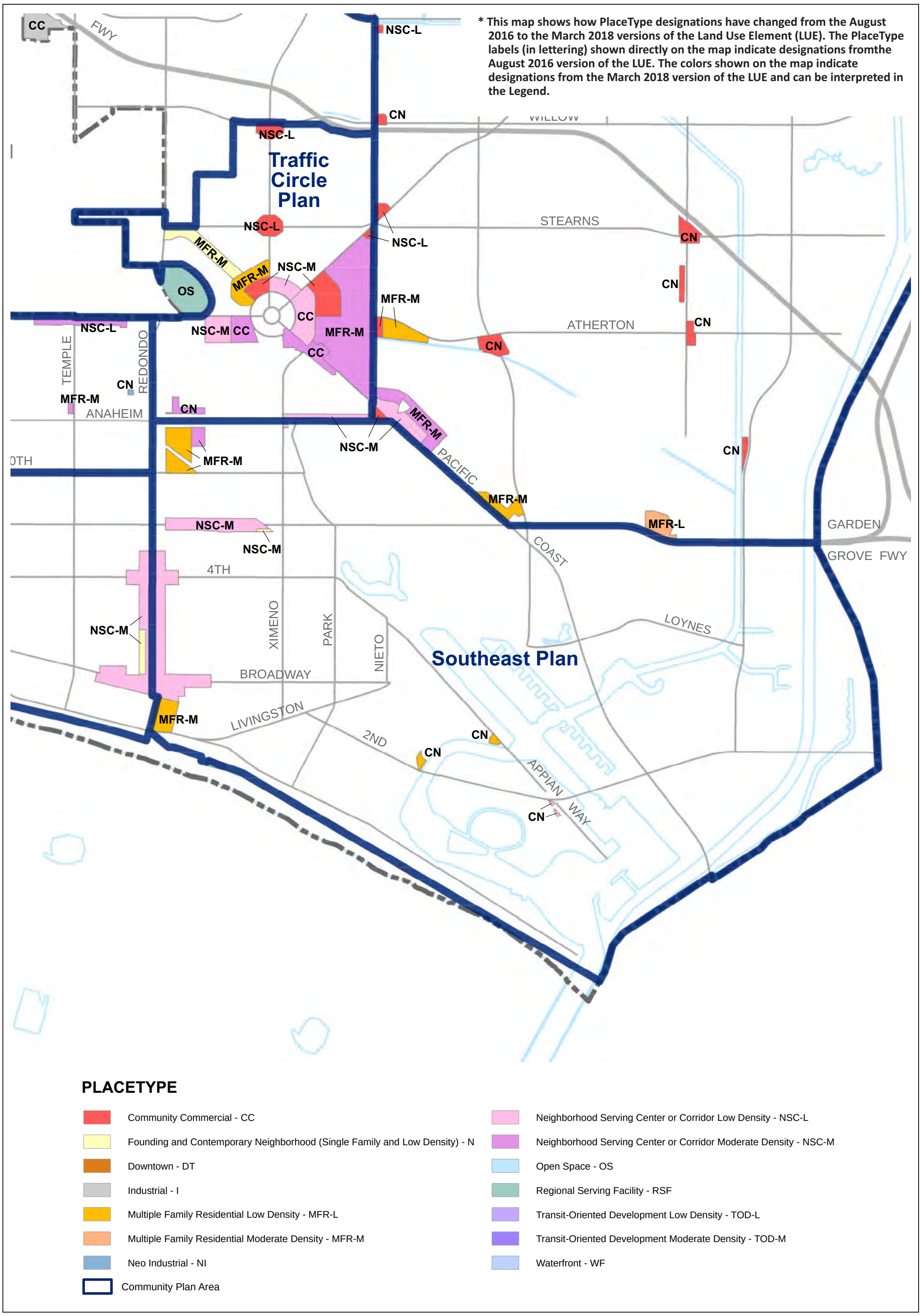

LSA

FIGURE 3.7d

N

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE PlaceTypes: 2016 to 2018 - Traffic Circle and Southeast

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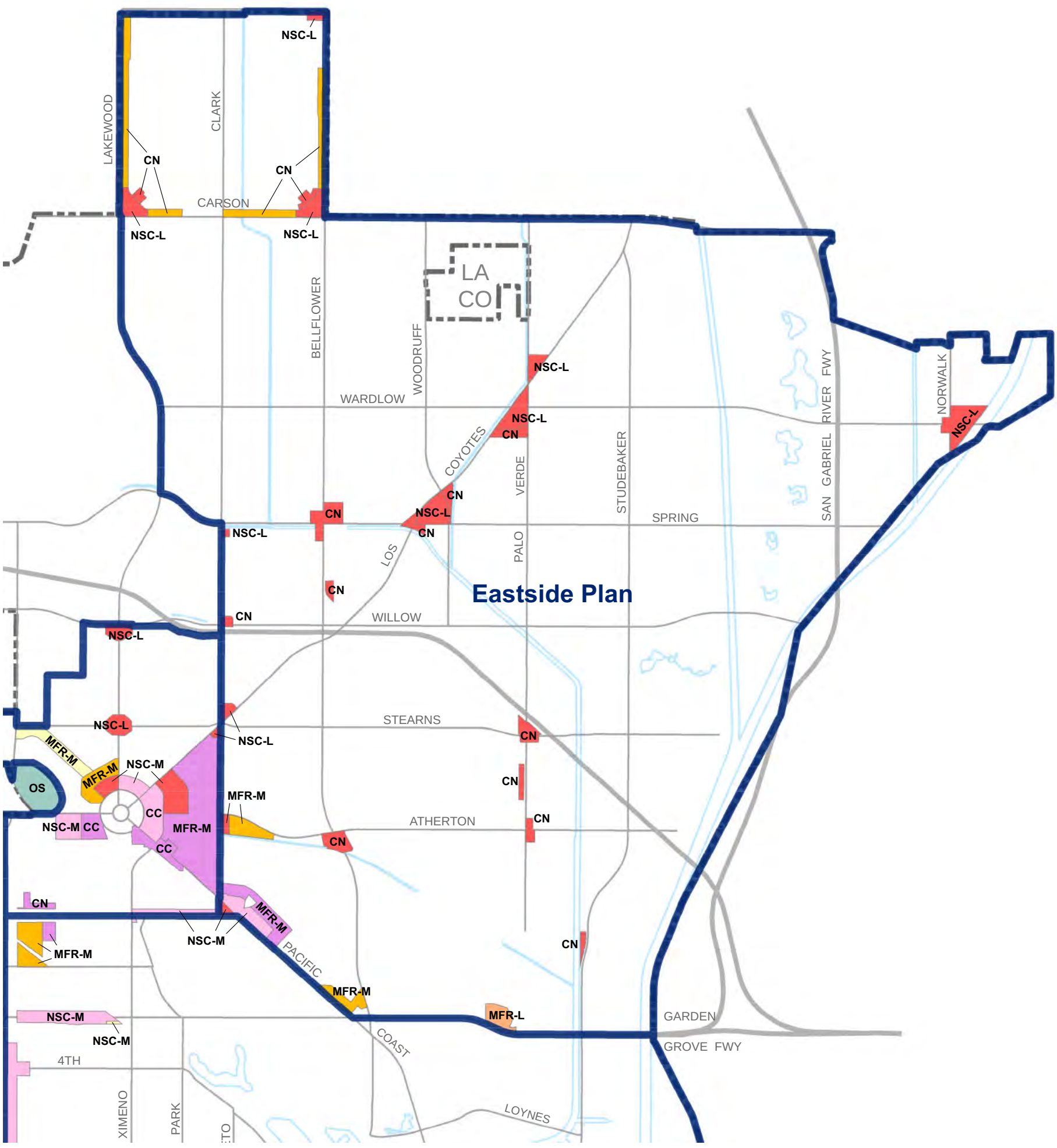

PLACETYPE

- Community Commercial - CC
- Founding and Contemporary Neighborhood (Single Family and Low Density) - N
- Downtown - DT
- Industrial - I
- Multiple Family Residential Low Density - MFR-L
- Multiple Family Residential Moderate Density - MFR-M
- Neo Industrial - NI
- Community Plan Area
- Neighborhood Serving Center or Corridor Low Density - NSC-L
- Neighborhood Serving Center or Corridor Moderate Density - NSC-M
- Open Space - OS
- Regional Serving Facility - RSF
- Transit-Oriented Development Low Density - TOD-L
- Transit-Oriented Development Moderate Density - TOD-M
- Waterfront - WF

LSA

FIGURE 3.7e

N

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE PlaceTypes: 2016 to 2018 - Eastside

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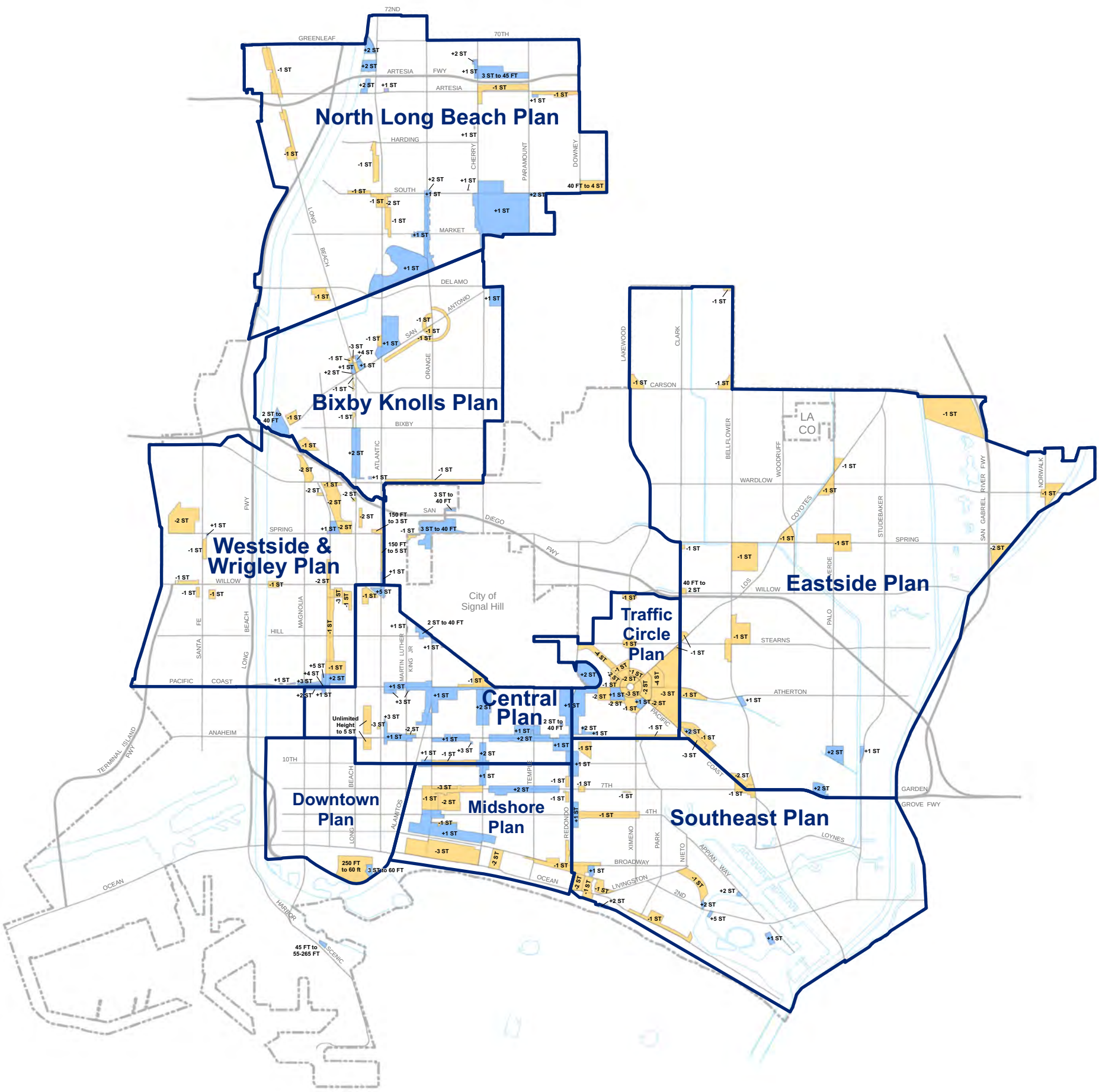
* The building height labels (in lettering) shown directly on the map indicate how maximum allowable building heights have changed from the August 2016 to the March 2018 versions of the Land Use Element (LUE). The colors shown on the map indicate whether the change involved a reduction or an increase in building height and can be interpreted in the Legend.



Legend

- Reduction in Building Height (Stories/Floors)
- Increase in Building Height (Stories/Floors)
- Community Plan Area

LSA

FIGURE 3.8a

N

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare Building Heights by Community Plan Area: 2016 to 2018

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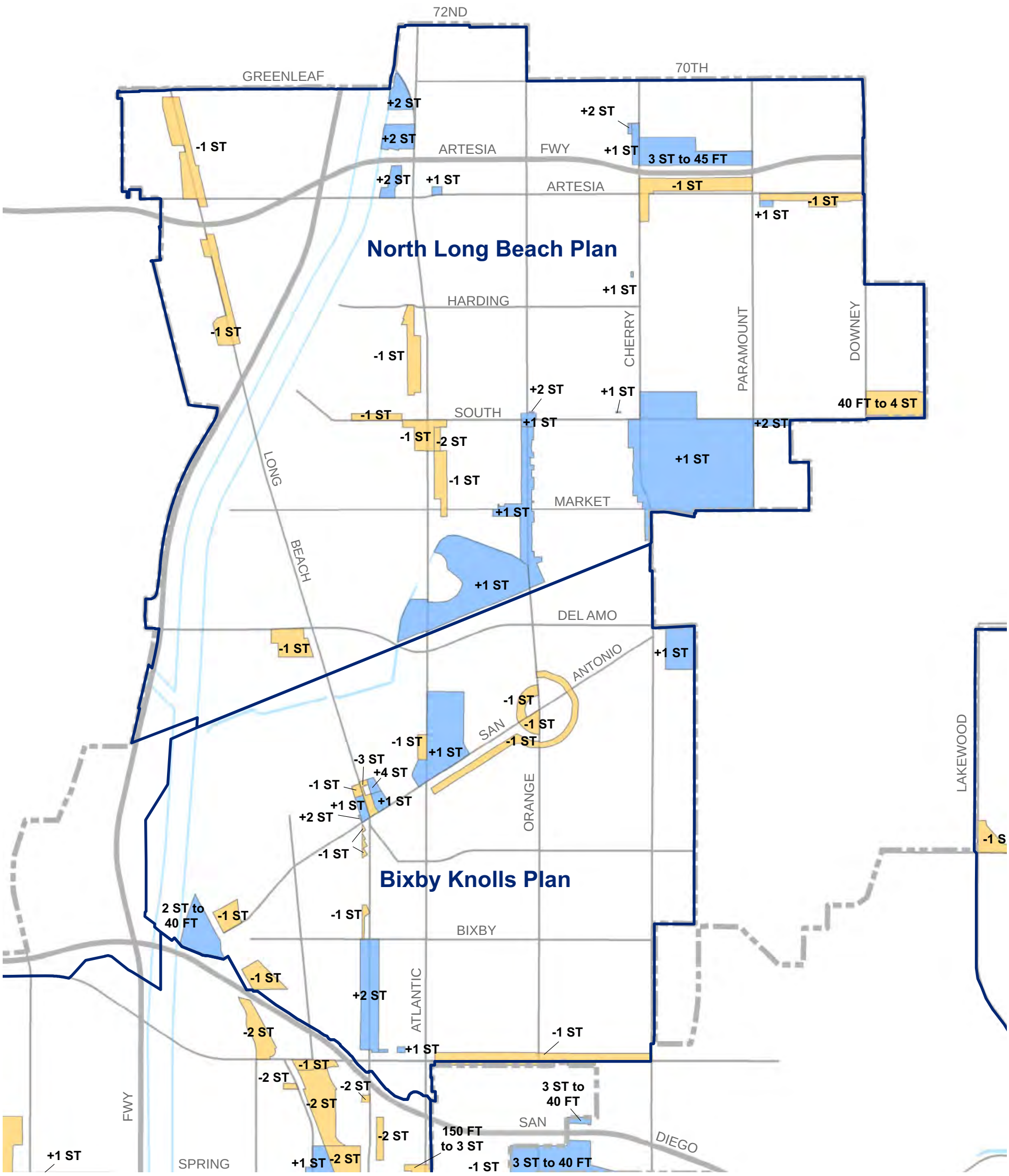
* The building height labels (in lettering) shown directly on the map indicate how maximum allowable building heights have changed from the August 2016 to the March 2018 versions of the Land Use Element (LUE). The colors shown on the map indicate whether the change involved a reduction or an increase in building height and can be interpreted in the Legend.



Legend

Reduction in Building Height (Stories/Floors)

Increase in Building Height (Stories/Floors)

Community Plan Area

LSA

FIGURE 3.8b

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE Building Heights: 2016 to 2018 - North Long Beach and Bixby Knolls

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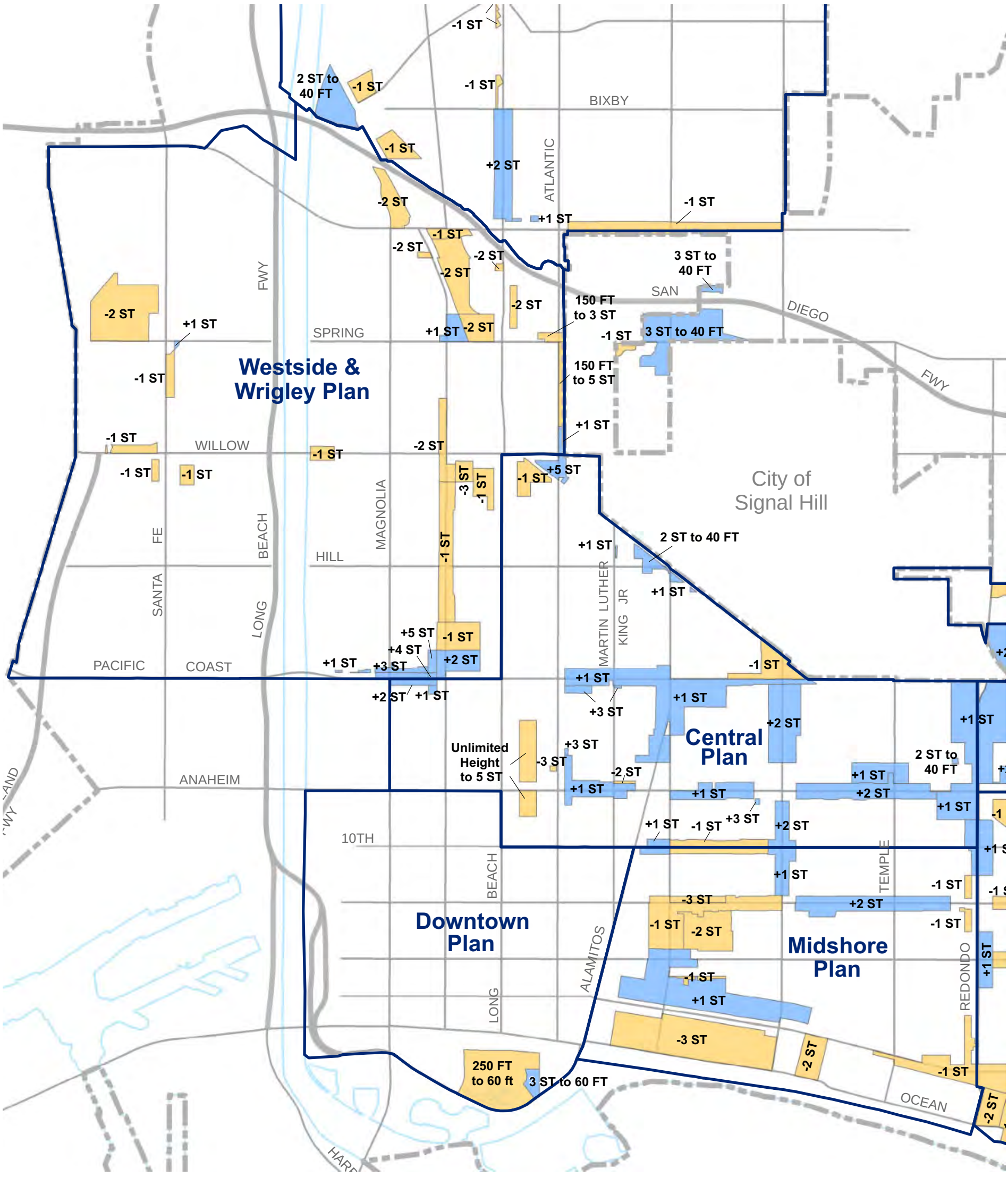

Legend

Reduction in Building Height (Stories/Floors)

Increase in Building Height (Stories/Floors)

Community Plan Area

LSA

FIGURE 3.8c

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE Building Heights: 2016 to 2018 - Westside & Wrigley, Central, Downtown, and Midshore

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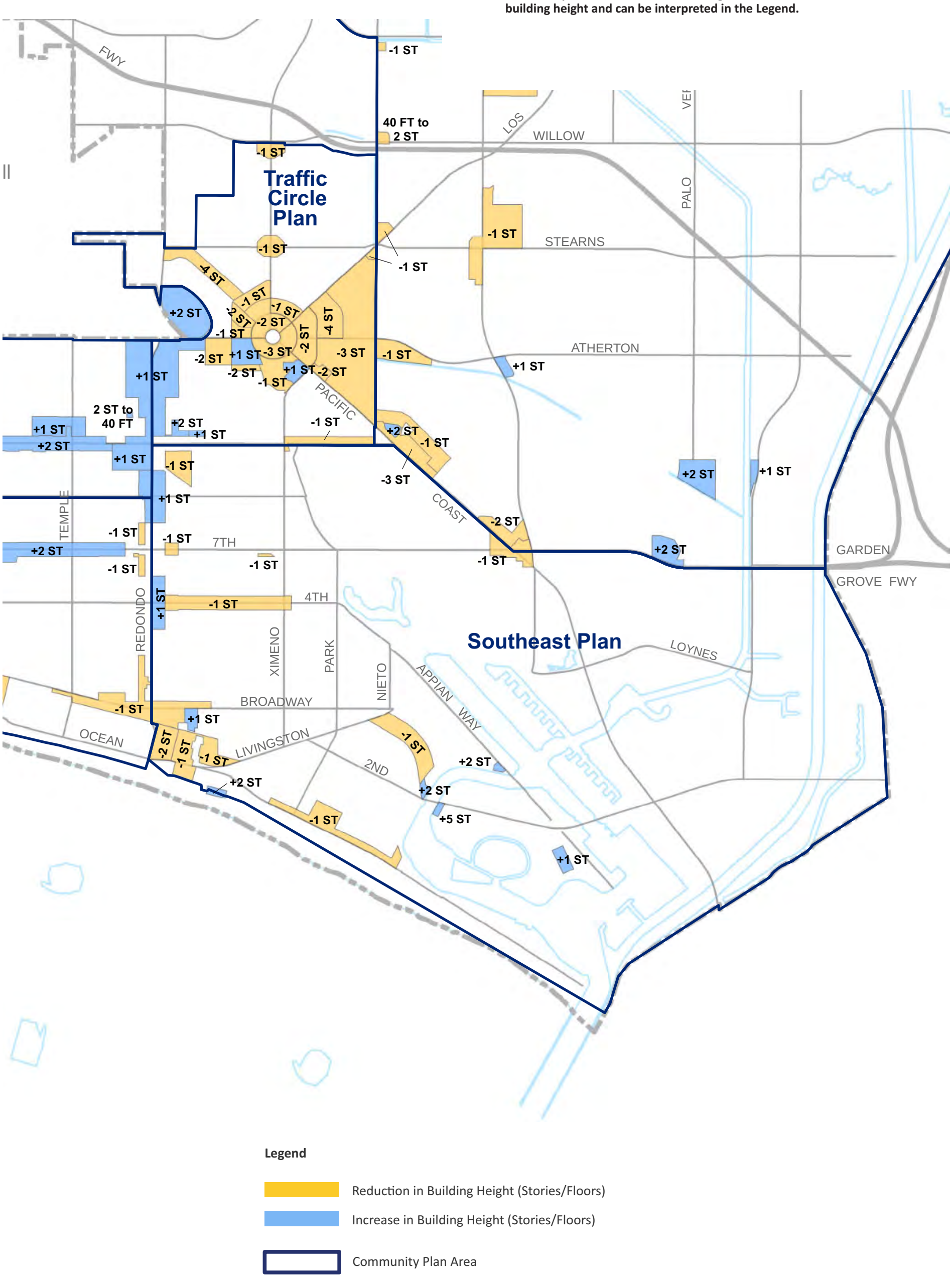

LSA

FIGURE 3.8d

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE Building Heights: 2016 to 2018 - Traffic Circle and Southeast

I:\CLB1804\G\Chapter 3\GP_Compare_LUE_Building_Height_5pg.cdr (6/4/2019)

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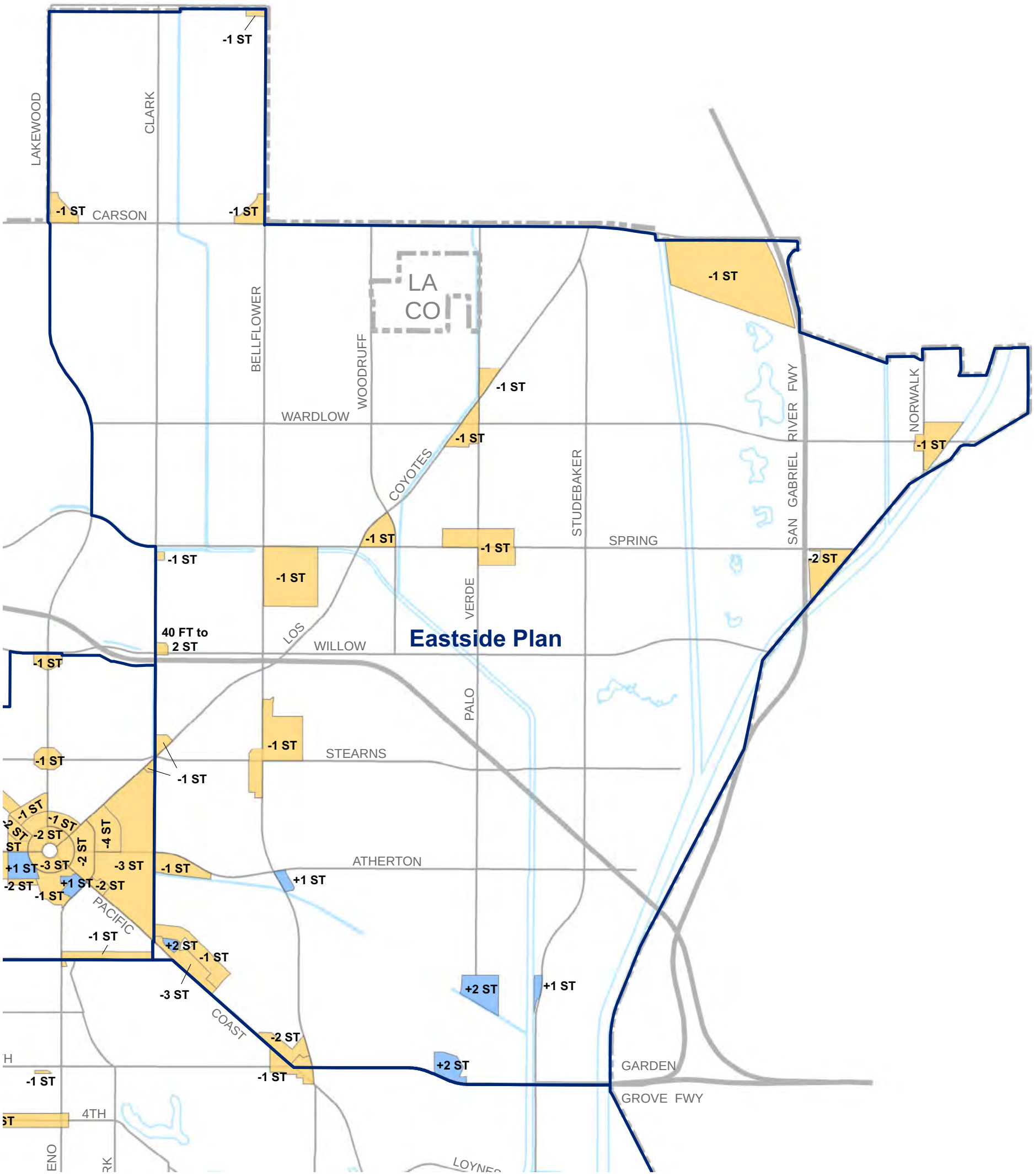
* The building height labels (in lettering) shown directly on the map indicate how maximum allowable building heights have changed from the August 2016 to the March 2018 versions of the Land Use Element (LUE). The colors shown on the map indicate whether the change involved a reduction or an increase in building height and can be interpreted in the Legend.



Legend

Reduction in Building Height (Stories/Floors)

Increase in Building Height (Stories/Floors)

Community Plan Area

LSA

FIGURE 3.8e

N

NO SCALE

SOURCE: Long Beach 2040 Land Use Element, March 2018

General Plan Land Use and Urban Design Elements

Compare LUE Building Heights: 2016 to 2018 - Eastside

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Defined public spaces along transportation corridors to promote "pedestrian-friendly" atmosphere.

Bicycle and pedestrian facilities along waterfront areas.

Multi-modal transportation opportunities along improved thoroughfares to reduce reliance on the automobile.

LSA

FIGURE 3.9a

N

NOT TO SCALE

SOURCE: Proposed Urban Design Element, City of Long Beach, March 2018

Long Beach General Plan
Land Use and Urban Design Elements

Urban Design Principles in Commercial Areas

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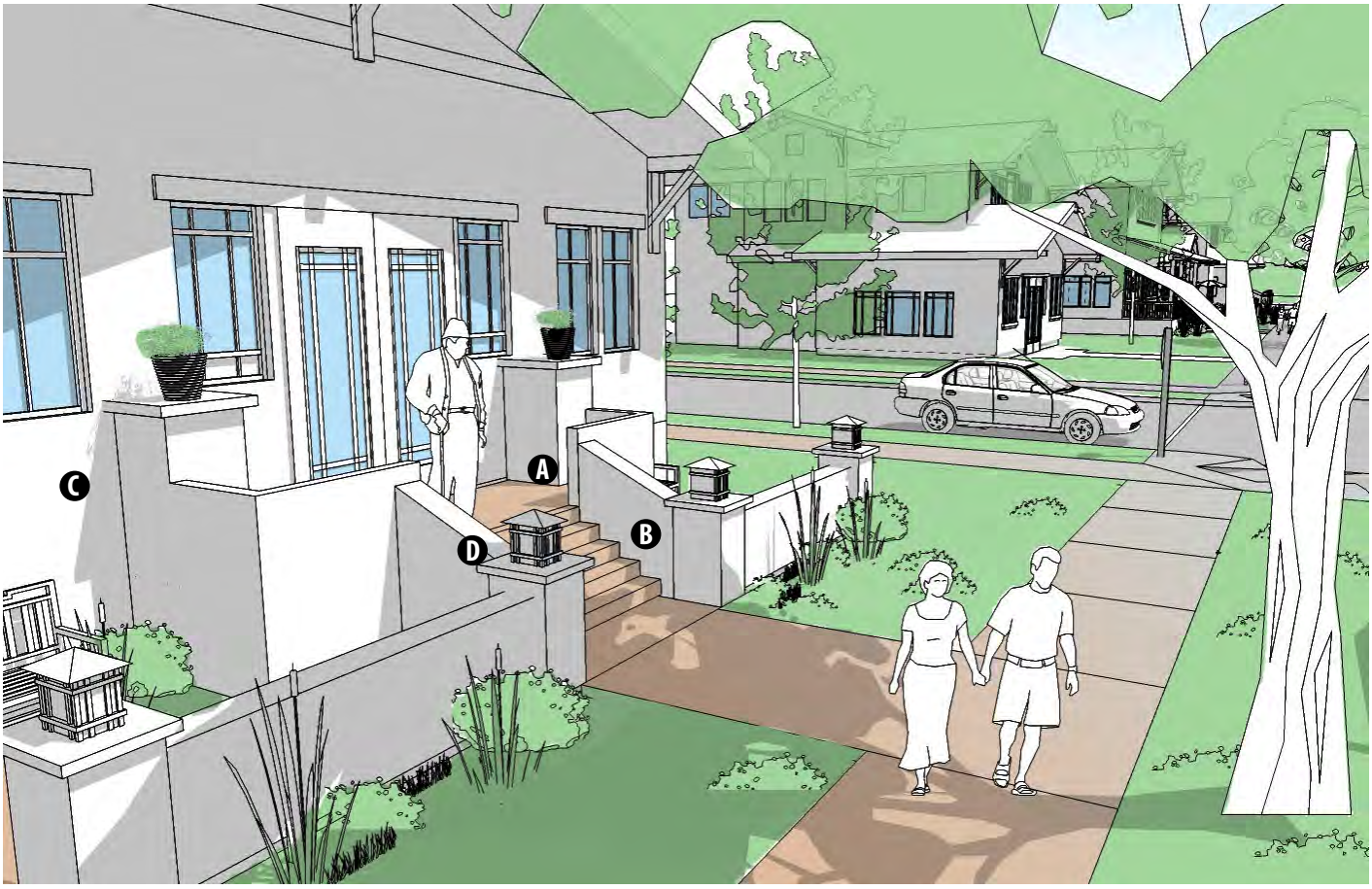

Example of stoop in residential area to promote transparency and vibrancy.

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.

LSA

FIGURE 3.9b
(Page 1 of 2)

N

NOT TO SCALE

SOURCE: Proposed Urban Design Element, City of Long Beach, March 2018

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Long Beach General Plan
Land Use and Urban Design Elements

Urban Design Principles in Residential Areas

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Example of streets in residential area to promote 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 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.

LSA

FIGURE 3.9b
(Page 2 of 2)

N

NOT TO SCALE

SOURCE: Proposed Urban Design Element, City of Long Beach, March 2018

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Long Beach General Plan
Land Use and Urban Design Elements

Urban Design Principles in Residential Areas

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4.0 EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES

The following chapter contains nine sections, each of which addresses one environmental topic outlined in Appendix G of the Guidelines for the California Environmental Quality Act (*State CEQA Guidelines*) (California Code of Regulations [CCR] Title 14, Chapter 3, Sections 15000–15397).

For each environmental impact issue analyzed, the Recirculated Draft Environmental Impact Report (EIR) includes a detailed explanation of the existing conditions, thresholds of significance that will be applied to determine whether the proposed General Plan Land Use and Urban Design Elements project's (proposed project) impacts are significant or less than significant, analysis of the environmental impacts, and a determination of whether the proposed project would have a significant impact if implemented. A "significant impact" or "significant effect" means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (14 CCR 15382). Each of the environmental topic sections in Chapter 4.0 also includes a discussion of the cumulative effects of the project when considered in combination with other projects causing related impacts, as required by Section 15130 of the *State CEQA Guidelines*.

Each of the nine environmental sections is organized into the following subsections:

1) **Introduction** briefly describes the topics and issues covered in the section.

2) **CEQA Baseline** describes the existing conditions that formulate the baseline for the environmental review of the proposed project, generally considered the conditions at the time the environmental analysis begins. When the 2016 Draft EIR was circulated, the CEQA base year was 2015 because the Notice of Preparation (NOP) was issued on May 18, 2015, and the environmental analysis was initiated at that time. The most up to dateinformation that was available at that time was used for analysis. Because the analysis for the Recirculated EIR began in 2018, and because the baseline data from 2015 were several years out of date, the CEQA base year was updated to 2018, and more up to date data were used for any sections for which they were available.

   Therefore, analysis for the Recirculated EIR relies on the most up to data available for various topic areas and relies on 2018 baseline data whenever it was available. One exception to the 2018 baseline data is the Land Use section, which uses a 2017 CEQA baseline in this Recirculated Draft EIR because the City conducted an updated inventory of existing land uses in September 2017. Another exception is the socioeconomic data that were used for analysis in the Recirculated Draft EIR.. The socioeconomic data is based on the most up to date information from the Southern California Association of Governments (SCAG), derived from the most up to date Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2016 Draft EIR was based on the 2012 RTP/SCS data, and this Recirculated EIR is updated to be based on the 2016 RTP/SCS, which was adopted after the 2016 EIR was released. The 2016 RTP/SCS is still the most up to date data source and relies upon 2012

socioeconomic base year data. In each section of this EIR, a more detailed description of the CEQA baseline and data sources is provided.

3) **Methodology** describes the approach and methods employed to complete the environmental analysis for the issue under investigation.

4) **Existing Environmental Setting** describes the physical conditions that exist at the present time that may influence or affect the issue under investigation. This section focuses on physical site characteristics that are relevant to the environmental topic being analyzed.

5) **Regulatory Setting** lists and discusses the laws, ordinances, regulations, and policies that relate to the specific environmental topic and how they apply to the proposed project.

6) **Thresholds of Significance** provides the thresholds that are the basis of the conclusions of significance, which are primarily the criteria in Appendix G of the *State CEQA Guidelines*.

7) **Compliance Measures and Project Design Features** are outlined to offset specific impacts. Compliance Measures (CMs) are regulations imposed by the approving agency and are required of all projects meeting specific criteria. Compliance with these measures would serve to further reduce the project's potential environmental effects. Because these features are standardized, they do not constitute mitigation measures.

   Project Design Features (PDFs) are specific components of the proposed project that have been incorporated to reduce potential environmental effects. PDFs are also described in the relevant sections of Chapter 4.0 for reduction of environmental effects of the proposed project. PDFs are not included for every environmental topic.

8) **Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies** lists the proposed goals, strategies, policies, and implementation measures from the Land Use and Urban Design Elements that are applicable to the analysis of each topical section of the Recirculated Draft EIR.

9) **Project Impacts** describes the potential environmental changes to the existing physical conditions that may occur if the proposed project is implemented. Evidence is presented to show the cause-and-effect relationship between the proposed project and potential changes in the environment. The exact magnitude, duration, extent, frequency, and range or other parameters of a potential impact are ascertained to the extent feasible to determine whether impacts may be significant. In accordance with CEQA, potential project impacts, if any, are classified as follows for each of the environmental topics discussed in this Recirculated Draft EIR.

   a. **Significant Adverse Impact.** Significant adverse impacts are those that cannot be fully mitigated or avoided. If the project is approved, decision-makers are required to adopt a statement of overriding considerations pursuant to *State CEQA Guidelines*

Section 15093 explaining why the project benefits outweigh the unavoidable adverse environmental effects caused by these significant adverse environmental impacts.

b. **Less than Significant Impact with Mitigation Incorporated.** This classification refers to significant environmental impacts that can be feasibly mitigated or avoided. If the project is approved, decision-makers are required to make findings pursuant to *State CEQA Guidelines* Section 15091 that adverse significant impacts have been mitigated to the maximum extent feasible through the implementation of mitigation measures.

c. **Less than Significant Impact.** Less than significant impacts are environmental impacts that have been identified but are not significant. No mitigation is required for less than significant impacts.

d. **No Impact.** A "no impact" determination is made when the proposed project is found to have no environmental impact.

10) **Mitigation Measures** are project-specific measures that would be required for the project to avoid, minimize, rectify, reduce, eliminate, or compensate for a potentially significant adverse impact.

11) **Cumulative Impacts** refers to potential environmental changes to the existing physical conditions that may occur as a result of project implementation together with all other reasonably foreseeable, planned, and approved future projects producing related impacts. Section 15355 of the *State CEQA Guidelines* defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts may result from individually minor but collectively significant projects taking place over a period of time. For each of the environmental topics considered in this Recirculated Draft EIR, the geographic scope of the cumulative analysis is defined. For example, the geographic scope of the cumulative analysis for potential cumulative land use and public service and utility impacts is the same, while the relevant cumulative area with respect to hydrology and water quality impacts includes all projected changes in areas within the watershed.

    The project includes the adoption and implementation of the proposed City of Long Beach General Plan Land Use and Urban Design Elements. The proposed Land Use Element and Urban Design Element will guide the overall physical development of the entire City through the horizon year 2040. Therefore, the cumulative impact discussion in each section of this Recirculated Draft EIR presents a broader examination of impacts considering future development throughout the City through the horizon year 2040.

12) **Level of Significance after Mitigation** describes the significance of potential impacts after implementation of mitigation measures. Potential significant unavoidable impacts are clearly stated in this section.

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4.1 AESTHETICS

4.1.1 Introduction

This section provides a discussion of the existing visual and aesthetic resources in the planning area and in the surrounding area, and evaluates the potential for changes in aesthetic character that could result from implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project). This section also evaluates the potential loss of existing visual resources, effects on public views, visual compatibility with existing uses, and light and glare impacts.

Information presented in this section is based on photographs of the planning area during field surveys and site visits; renderings of potential future development plans; PlaceTypes designated in the proposed Land Use Element (LUE) (March 2018) (Appendix H); design guidelines outlined in the proposed Urban Design Element (UDE) (March 2018) (Appendix H); and the City of Long Beach (City) General Plan Open Space and Recreation (2002), Conservation (1973), and Scenic Routes (1975) Elements.

4.1.2 CEQA Baseline

Since the time the Notice of Preparation (NOP) was published (May 2015), new development has occurred throughout the City, including within the eight Major Areas of Change. In addition, there has been significant public interest in project-related impacts with respect to aesthetic resources. As such, the analysis in this section has been revised to place an emphasis on aesthetic changes that would occur as a result of project implementation within each of the nine Community Plan areas rather than emphasizing only the eight Major Areas of Change (refer to Figures 3.2, Community Plan Areas, and 3.6, Major Areas of Change, in Chapter 3.0, Project Description). While the eight Major Areas of Change are considered throughout this section, the analysis also includes discussion about areas within the City that will experience negligible change.

The PlaceTypes and PlaceTypes Heights Maps included in the proposed LUE were substantially revised in response to community input on the project since the 2016 Draft EIR was released (refer to Chapter 3.0, Project Description, for further discussion related to project changes). As such, this section evaluates aesthetic impacts resulting from the revised project.

4.1.3 Methodology

4.1.3.1 Key Concepts and Terminology

The concepts and terminology used in this analysis are described below.

- **Scenic Resource:** Scenic resources are defined as natural or man-made elements that contribute to an area's scenic value and are visually pleasing. Scenic resources include landforms, vegetation, water, or adjacent scenery and may include a cultural modification to the natural environment. The degree to which these resources are present in a community is clearly subject to personal and cultural interpretation. However, it is possible to qualify certain resources as having aesthetic characteristics and establish general guidelines for assessing the aesthetic

impacts of new development. The most prominent scenic resources in the planning areas are the Port of Long Beach, Pacific Ocean, and associated beaches.

- **Scenic Vista:** A scenic vista is viewpoint that provides expansive views of a highly valued landscape for the public's benefit. It is usually viewed from some distance away. Aesthetic components of a scenic vista include (1) scenic quality, (2) sensitivity level, and (3) view access. A scenic vista can be impacted in two ways: a development project can have visual impacts by either directly diminishing the scenic quality of the vista or by blocking the view corridors or "vista" of the scenic resource. Important factors in determining whether a proposed project would block scenic vistas include the project's proposed height, mass, and location relative to surrounding land uses and travel corridors.

  Scenic vistas within the planning area include views of the Pacific Ocean, the Los Cerritos Wetlands, Jack Dunster Marine Biological Reserve, Golden Shore Marine Biological Reserve Park, and the Dominguez Gap Wetlands. Views of distant mountain ranges, such as the San Gabriel, San Bernardino, and Santa Ana Mountains, also constitute scenic vistas within the planning area.

- **Sensitive View:** Sensitive views are generally those associated with designated vantage points and public recreational uses, but the term can be more broadly applied to encompass any valued public vantage point. Sensitivity level has to do with the (1) intensity of use of a visual resource; (2) visibility of a visual resource; and (3) importance of the visual resource to users.

- **Scenic Corridors:** Scenic corridors are channels that facilitate movement (primarily by automobile, transit, bicycle, or foot) from one location to another with expansive views of natural landscapes and visually attractive man-made development. Scenic corridors analyzed under the California Environmental Quality Act (CEQA) typically include State-designated scenic highways.

- **Visual Character and Quality:** The visual aesthetic character or quality of a streetscape, building, group of buildings, or other man-made or natural feature that creates an overall impression of an area within an urban context. For example, a scenic vista along the boundary of a community, a pleasing streetscape with trees, and well-kept residences and yards are scenic resources that create a pleasing impression of an area. In general, concepts of visual character and quality can be organized around four basic elements: (1) site utilization, (2) buildings and structures, (3) landscaping, and (4) signage. Adverse visual quality effects can include the loss of aesthetic features or the introduction of contrasting features that could contribute to a decline in overall visual character. In addition, the degree of access to a visual resource contributes to the value of that resource so that an adverse visual quality effect can also occur if access to a visual resource is restricted.

- **Glare:** A continuous or periodic intense light that may cause eye discomfort or be temporarily blinding to humans.

- **Light Source:** A device that produces illumination, including incandescent bulbs, fluorescent and neon tubes, halogen and other vapor lamps, and reflecting surfaces or refractors incorporated into a lighting fixture. Any translucent enclosure of a light source is considered to be part of the light source.

The analysis of visual impacts focuses on changes in the visual character of the planning area that may result subsequent to the approval of the proposed project. This would include the visual compatibility of on-site and adjacent uses, changes in vistas and viewsheds where visual changes would be evident, changes to scenic resources along designated scenic roads, and the introduction of new sources of light and glare. Impacts to the existing environment in and around the planning area are identified by the contrast between the visual setting of the planning area before and after implementation of the proposed project.

Although few standards exist to singularly define perceptions of aesthetic value, the degree of visual change can be described in terms of visual contrast. The visual contrast of pattern elements[1] within visual environments can be described based on four aspects of pattern character[2]: dominance, scale, diversity, and continuity. The enjoyment or interpretation of the visual experience is the visual quality. The degree of visual character and quality is evaluated around three descriptive elements: vividness, intactness, and unity. None of these descriptive elements alone is equivalent to visual quality; all three must be high to substantiate high visual quality.

- **Vividness:** Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns. For example, the view of the Grand Canyon would be rated high for vividness. In the City, views of the Port of Long Beach would be rated high for vividness.
- **Intactness:** Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes and natural settings. For example, the view of a two-lane road meandering through the countryside would be rated high for intactness. In the City, views of the Alamitos Bay from Vista Marina Park would be rated high for intactness.
- **Unity:** Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape. For example, the view of an English or Japanese garden would be rated high for unity. In the City, views of the Pacific Ocean would be rated high for unity.

Visual changes to an existing setting could result in a positive or a negative perception of the proposed project depending on the viewer groups. Thus, viewer sensitivity is a combination of visual quality changes and viewer response to those changes. Viewer sensitivity to a project varies depending on familiarity with existing views, the sense of ownership of these views, and the activities viewers perform in relationship to those views. Visual perception is the act of seeing or recognizing an object and can be affected by physical conditions such as distance and speed. As an observer's distance increases from an object, the ability to see the details of an object decreases. Similarly, as an observer's speed increases, the sharpness of lateral vision declines and the observer tends to focus along the line of travel. Thus, the physical location of the viewer group and the duration of its view would affect viewer exposure. All of these factors potentially affect perception and reaction to visual changes.

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1 Pattern elements are primary attributes of a landscape and include form, line, color, and texture.

2 Pattern character refers to the visual relationships of pattern elements.

Potential impacts of the proposed project on area viewsheds are analyzed by evaluating project impacts from three viewing distance zones, as explained below.

- **Foreground Views.** These views include elements that are seen at a close distance and that dominate the entire view. These vantage points are generally 500 feet (ft) or less from the planning area, depending on the scale of the project, surrounding topography, and other prominent physical features in the project vicinity.
- **Middleground Views.** These views include elements that are seen at a moderate distance and that partially dominate the view. These vantage points are generally located between 500 ft and 1 mile from the planning area.
- **Background Views.** These views include elements that are seen at a long distance and typically comprise horizon-line views that are part of the overall visual composition of the area. These vantage points are generally farther than 1 mile from the planning area.

Light and Glare. The analysis of light and glare identifies the location of light-sensitive land uses and describes the existing ambient conditions on and in the vicinity of the planning area. The analysis describes the proposed project's light and glare sources and the extent to which project lighting, including any potential illuminated signage, would spill off the planning area onto adjacent light-sensitive areas. The analysis also describes the affected street frontages, the direction in which the light would be focused, and the extent to which the proposed project would illuminate sensitive land uses. The analysis also considers the potential for sunlight to reflect off of windows and building surfaces (glare) and the extent to which such glare would interfere with the operation of motor vehicles, aviation, or other activities. Glare can also be produced during evening and night-time hours by artificial light sources, such as illuminated signage and vehicle headlights. Glare-sensitive uses generally include residences and transportation corridors (i.e., roadways).

Shade/Shadow. Prolonged periods of shade and shadowing have the potential to negatively affect the character of certain land uses. Shadow-sensitive uses include routinely used outdoor spaces associated with residential, recreational, or institutional land uses; commercial uses, such as pedestrian-oriented outdoor spaces or restaurants with outdoor seating areas; nurseries; and existing solar collectors/panels.

4.1.3.2 Analysis Approach

As stated above, the assessment of aesthetic impacts is subjective by nature. This analysis attempts to identify and objectively examine factors that contribute to the perception of aesthetic impacts that would be caused by the proposed project. The potential aesthetic impacts of the proposed project were assessed based on consideration of several factors, including scale, mass, proportion, and factors described above. Edge conditions and viewshed alterations are also considered in the context of these factors to the extent such information is known.

The City has not adopted defined standards for analyzing aesthetic impacts. Because the proposed project under evaluation in this Recirculated Draft EIR includes both the proposed LUE and UDE of the City's General Plan, and because specific design plans for new development occurring as a result of project approval are not known at this time, the visual effects of the proposed project are

evaluated based on the project's consistency with goals and policies established in the Open Space and Recreation (2002), Conservation (1973), and Scenic Routes (1975) Elements of the City's General Plan and whether or not land use and visual changes resulting from the project would be compatible with the surrounding area. Consideration is also given to the visual effects of the proposed project assuming the anticipated General Plan build out.

In order to evaluate the potential visual effects of the proposed project, the existing visual setting of the planning area is compared with land use and visual changes associated with the proposed project. Because the proposed project targets eight Major Areas of Change within the planning area, a particular emphasis has been placed on these areas when analyzing project-related impacts to aesthetics. As such, one key view from within each of the eight Major Areas of Change was selected to demonstrate the visual character and approximate massing of existing uses and potential development within areas targeted for change. Eleven additional key views are included in this analysis to demonstrate views from various public vantage points and areas of special interest to the public as expressed or commented on during the public review for the Draft EIR (September 2016). In many instances, these key views do not represent a Major Area of Change, but are included in this analysis to provide information regarding project-related changes to aesthetic resources in the planning area. In total, 19 key views are considered in this aesthetics analysis.

Key views were taken from public roadways and not from private property. Figure 4.1.2, Key View Map, illustrates the vantage point from which each key view photograph was taken and illustrates the representative view from that location. All figures are provided at the end of this section.

Figures 4.1.3-1 through 4.1.3-19, Key Views, illustrate each of the 19 key views selected for this analysis. Where prominent changes are anticipated to occur, renderings of the post-project condition have been provided to represent new development envisioned under the proposed project. These key views include two iterations of the view: (1) an Existing Conditions view, which shows the viewshed in its existing state, and (2) a Project Rendering, which shows the future viewshed facilitated by approval of the proposed project. However, key views without renderings have also been included to illustrate several areas of the City that are not anticipated to experience significant changes in land use patterns that would affect the existing visual character (these key views only include the Existing Conditions view). The Project Renderings are representative of scale, mass, and proportion of future development subsequent to the approval of the proposed project; the key views do not represent actual proposed build-out conditions following implementation of the project as future development plans are not known at this time. Instead, Project Renderings should be considered conceptual representations of potential future development.

4.1.4 Existing Environmental Analysis

4.1.4.1 Visual Resources

Scenic Resources. Scenic resources are natural or man-made features that are aesthetically pleasing and contribute to the definition of a community. Examples of scenic resources include trees and landscaping, rock outcroppings, historic buildings, and public art. Scenic resources within the planning area include the Pacific Ocean, the Port of Long Beach, the San Gabriel, San Bernardino, and Santa Ana Mountains, and the Los Cerritos Wetlands. Views of the San Gabriel Mountains can be seen from various points throughout the City, with the most predominant views being from the

northern areas of the City and from higher elevations. Distant views of the San Bernardino and Santa Ana Mountains can be seen from higher elevations in the City. Views of the Pacific Ocean, including Alamitos Bay, Rainbow Harbor, and the Port of Long Beach, can be seen along the City's shoreline and from higher elevations in the City. Views of the Los Cerritos Wetlands are visible from the Southeast Area Specific Plan (SEASP) planning area and provide expansive views of native wetlands vegetation, including facilities associated with oil operations such as oil derricks and mechanical buildings that are part of the overall landscape. However, the most prominent scenic resources within the planning area are the Pacific Ocean and the associated beaches and marinas located along the City's coastline. Examples of beaches and marinas in the City include, but are not limited to, Alamitos Beach, Alamitos Bay-Long Beach Marina, Belmont Shore Beach, Colorado Lagoon Park and Beach, Granada Beach and Rosie's Dog Beach, Long Beach City Beach, Mother's Beach, and Rainbow Harbor and Marina.

Scenic Vistas. As previously stated, scenic vistas are viewpoints that provide expansive views of a highly valued landscape for the public's benefit. Scenic vistas within the planning area include views of the Pacific Ocean, the Los Cerritos Wetlands, the Jack Dunster Marine Biological Reserve, Golden Shore Marine Biological Reserve Park, and the Dominguez Gap Wetlands. Views of distant mountain ranges, such as the San Gabriel, San Bernardino, and Santa Ana Mountains, also constitute scenic vistas within the planning area. However, the Pacific Ocean is the most prominent visual asset in the planning area.

Sensitive View. As previously stated, sensitive views are generally those associated with designated vantage points and public recreational uses, but the term can be more broadly applied to encompass any valued public vantage point.

Scenic Corridors. As previously stated, scenic corridors are defined as roadways and thoroughfares that provide expansive views of natural landscapes and attractive man-made developments. According to the Caltrans Scenic Highway Mapping System, there are no State-designated scenic highways in the planning area; however, Pacific Coast Highway (PCH) is considered to be an Eligible State Scenic Highway.[1] Existing scenic corridors and routes in the City are designated in the City's General Plan SRE for the purpose of preserving scenic views afforded to pedestrians, motorists, and bicyclists traveling throughout the City. Specifically, the SRE classifies the following four categories of scenic routes: (1) Recreational Scenic Route, which spans 33 miles and offers views of parks and recreational amenities (2) Historical-Cultural Scenic Route, which spans 21 miles and connects the City's historic and cultural resources (3) Industrial-Educational Scenic Route, which traverses the southwestern portion of the City and highlights industrial areas and transport activity nodes, including the Port of Long Beach, and (4) Bicycle Scenic Route, which spans 52 miles and utilizes flood control channels, beach and park easements, railroad and utility rights-of-way, and other routes deemed suitable for cyclists.

Visual Character. The planning area includes the entire 50 square miles within the limits of the City that are framed by natural and man-made features. Most notably, the Pacific Ocean frames the

[1] Caltrans Scenic Highway Mapping System. Website: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ (accessed September 25, 2018).

southern waterfront edge of the City. The San Gabriel River and Coyote Creek define the eastern edge of the planning area; Port-related facilities, the Los Angeles River, and developed areas form the eastern edge of the City; and developed areas form the northern edge of the City.

The planning area is almost entirely developed with a mix of residential, commercial, industrial, recreational, and institutional uses. The majority of the planning area is characterized by low-to-moderate-density residential uses (approximately one- to two-stories in height) located throughout the City; however, the Downtown and Port areas serve as visual focal points for inland and coastal areas of the City (refer to Figure 4.1.1, Downtown Aerial View, for a depiction of the building intensity in the City's Downtown area). In addition, the entertainment activities at Rainbow Harbor combine with the visual landscapes of the Downtown and Port areas to provide a central visual point of interest for viewers. Views of neighborhoods surrounding the Downtown areas are typical of those in suburban areas with auto-oriented commercial centers.

Neighborhood Visual Character. The visual character of the planning area is variable depending on the viewer's location within the City. Generally, the planning area can be defined by its community plan areas, which vary by the mix of land uses and architectural character. The planning areas are comprised of the following nine primary community plan areas (refer to Figure 3.2, Community Plan Areas): North Long Beach, Bixby Knolls, Westside and Wrigley, Eastside, Central, Traffic Circle, Downtown, Midshore, and Southeast. The neighborhood visual character of each of these community plan areas is summarized below, along with a description of the existing visual setting of key views within each neighborhood.

1. **North Long Beach.** The North Long Beach area is located west of the Interstate 710 (I-710) and includes the areas located west of Downey Avenue and north of the Union Pacific Railroad (UPRR). This area is predominantly characterized by low-scale development largely consisting of residential, commercial, industrial, and institutional uses. The residential uses in this area are typically one- and two-story single-family dwellings and multifamily dwellings generally not exceeding four stories. Commercial uses along major corridors, such as Long Beach Boulevard and Atlantic Avenue, maintain varied setbacks. Newer commercial/retail buildings along these corridors typically have larger setbacks for parking areas to buffer the buildings from the roadway, while older buildings are typically situated at the right-of-way limits with no setbacks. The areas in the vicinity of Paramount Boulevard and South Street consist of low-density industrial uses and associated equipment storage areas.

   Key View 1: View of 2400 East Artesia Boulevard: Key View 1 shows a view looking northwest from East Artesia Boulevard and Paramount Boulevard in North Long Beach. This vantage point was chosen because it represents an area currently characterized by industrial and commercial uses that would be converted to the Neo-Industrial (NI) PlaceType under the proposed project, which allows office, manufacturing, and commercial development (refer to Figure 4.1.3-1). This vantage point represents a Major Area of Change (Convert to Neo-Industrial Uses).

   Key View 2: View of 5368 Atlantic Avenue: Key View 2 shows a view looking southeast from Atlantic Avenue, south of Market Street, in North Long Beach. As illustrated by Figure 4.1.3-2, the existing visual character of this neighborhood is defined by commercial and industrial uses and mature landscaping. This vantage point was chosen because it represents the

Neighborhood-Serving Center or Corridor - Low (NSC-Low) PlaceType, which allows mixed-use development. This vantage point is not within a Major Area of Change

2. **Bixby Knolls.** The Bixby Knolls area consists of the California Heights, Los Cerritos, Bixby Knolls, Bixby Highlands, Scherer Park, Ridgewood Heights, and Ranton Circle neighborhoods. This community is home to several historic residential resources dating from the 1920s and 1940s. The area also includes a retail corridor along Atlantic Avenue between San Antonio Drive and Interstate 405 (I-405). This corridor is predominantly characterized by retail shops with large window facades, sidewalks on both sides of the street, and traffic-calming features (e.g., landscaped medians) that combine to add to the pedestrian-friendly nature and aesthetic character of this arterial within the Bixby Knolls area. While newer auto-oriented commercial uses are present along this corridor (near 45th Street and Atlantic Avenue), the historic character and scale of existing residential uses largely remains intact between Antonio Drive and East Bixby Road.

   Key View 3: View from Cherry Avenue: Key View 3 shows a view looking northeast from Cherry Avenue in Bixby Knolls. As illustrated by Figure 4.1.3-3, the existing visual character of this neighborhood is defined by industrial uses that would be converted to commercial and office uses under the proposed project. This vantage point was chosen because it represents a Major Area of Change (Transition from Industrial Uses to Commercial Uses).

3. **Westside and Wrigley.** The Westside neighborhood is located on the west side of the I-710 and includes the Westside and Arlington neighborhoods. This neighborhood is characterized by low-density development comprised of one- and two-story residential and commercial buildings. The majority of the housing units in this area are single-family detached homes, with many of these homes having been constructed in the 1920s and 1940s. The residential and commercial structures in this area maintain remnants of the architecture and styles of the era, but the intactness of their historic value is highly variable. The Century Villages at Cabrillo (CVC) development is located north of PCH and east of State Route 103 (SR-103), the Terminal Island Freeway. The CVC is a 27-acre multifamily development and includes buildings that are approximately four stories designed in a modern style of architecture, which is a variation from the traditional architectural style in this area. The CVC provides transitional and permanent supportive housing for children, veterans suffering from post-traumatic stress disorder (PTSD), aging veterans, and other homeless persons with dual diagnosis, such as substance abuse and mental illness.

   The Wrigley neighborhood is located on the east side of the I-710 and west of Long Beach Boulevard. Having been constructed during the 1950s, this neighborhood is largely characterized by low-density post-World War II housing developments with mature tree-lined parkways.

   Key View 4: View of the 3100 Block of Cedar Avenue: Key View 4 shows a view looking north on the 3100 block of Cedar Avenue in the Wrigley neighborhood. As illustrated by Figure 4.1.3-4, the visual character of this area is currently defined by low-density residential uses and mature landscaping. This vantage point was chosen because it represents the Founding and Contemporary Neighborhood (FCN) PlaceType, which allows low-density residential development. This vantage point is not within a Major Area of Change.

Key View 5: View of 701 West Willow Street: Key View 5 shows a view looking northeast from West Willow Street and Orange Avenue in the Wrigley neighborhood. As illustrated by Figure 4.1.3-5, the existing visual character of this neighborhood is defined by low-density neighborhood-serving commercial uses. This vantage point was chosen because it represents the Neighborhood-Serving Center or Corridor - Low (NSC-Low) PlaceType, which allows mixed-use development. This vantage point is not within a Major Area of Change.

4. **Eastside.** The Eastside area is the largest community plan area in the City and is bound by the Cities of Los Alamitos and Hawaiian Gardens to the east, the City of Lakewood to the north, and PCH and 7th Street to the south. Predominant uses in this area include low-density housing, shopping centers, schools, religious institutions, and parks. The Eastside area also contains the 800-acre El Dorado Regional Park and the California State University, Long Beach campus. The residential neighborhoods in this area are characterized by low-density (one- and two-story) post-World War II suburban developments with mature tree-lined parkways. Auto-oriented commercial centers are located along major corridors (i.e., Bellflower Boulevard and Spring Street) to serve the surrounding homes and businesses within the Eastside area. The low-density scale and post-WWII architecture of the residential dwellings is largely consistent throughout Eastside. The commercial centers in the Eastside area are diverse in their architectural styles; however, the concentration of similarly scaled commercial developments along major corridors provides a pattern of development that maintains consistency in this neighborhood.

   Key View 6: View of 3490 Spring Street: Key View 6 shows a view looking southeast from Spring Street, west of Redondo Boulevard, in the Eastside neighborhood of Long Beach. As illustrated by Figure 4.1.3-6, the visual character of this neighborhood is currently defined by low-density commercial and office uses. This vantage point was chosen because it represents the Regional-Serving Facility (RSF) PlaceType. Due to its proximity to the Long Beach Airport, the maximum allowable height is regulated by the Federal Aviation Administration (FAA). This vantage point represents a Major Area of Change (Promote Regional-Serving Uses).

   Key View 7: View of 3455 North Studebaker Road: Key View 7 shows a view looking northwest from North Studebaker Road, north of Wardlow Road, in the Eastside neighborhood of Long Beach. As illustrated by Figure 4.1.3-7, the visual character of this neighborhood is currently defined by low-density residential uses. This vantage point was chosen because it represents the Founding and Contemporary Neighborhood (FCN) PlaceType, which allows low-density residential development. This vantage point is not within a Major Area of Change and does not include a future viewshed rendering.

   Key View 8: View of 6235 Spring Street: Key View 8 shows a view looking northwest from Spring Street, west of Palo Verde, in the Eastside neighborhood of Long Beach. As illustrated by Figure 4.1.3-8, the visual character of this neighborhood is currently defined by commercial uses of varying intensities. This vantage point was chosen because it represents the Community Commercial (CC) PlaceType. This vantage point is not within a Major Area of Change.

5. **Central.** The Central area largely encompasses the area around the intersection of Orange Avenue and PCH and includes the Central Area West, Central Area East, and Washington School neighborhoods. The primary uses in this community plan area are residential and commercial. The residential dwellings in this area include a mix of single-family and multifamily dwellings of

varied time periods and architecture. The business corridor along Anaheim Street in the Central area is home to Cambodia Town, which is largely characterized by one-story commercial uses consisting of both auto- and pedestrian-oriented development patterns. In addition to these residential and commercial uses, the Central area is characterized by several historic resources; however, the most prominent historic resource within the Central area is the Minerva Park Place Historic District. This Historic District is located along Minerva Park near the intersection of Gaviota Avenue and 11th Street. Homes lining this street are reflective of the Spanish Colonial Revival architectural style and were built as part of a single development project in 1925.

Key View 9: View of 1750 Pacific Avenue: Key View 9 shows a view looking west from Pacific Avenue, south of PCH, in Central Long Beach. As illustrated by Figure 4.1.3-9, the visual character of this neighborhood is currently defined by commercial uses of varying intensities. This vantage point was chosen because it represents the Transit-Oriented Development - Low (TOD-L) PlaceType, which allows mixed-use development. This vantage point represents a Major Area of Change (Promote Transit-Oriented Development Uses).

Key View 10: View of 1006 Junipero Avenue: Key View 10 shows a view looking northeast from Junipero Avenue and 10th Street in Central Long Beach. As illustrated by Figure 4.1.3-10, the visual character of this neighborhood is currently defined by light industrial and commercial uses of varying intensities and low-density residential uses. This vantage point was chosen because it represents the Multi-Family Residential - Low (MFR-L) PlaceType, which allows low-density, multifamily residential development. This vantage point is not within a Major Area of Change.

6. **Traffic Circle.** The Traffic Circle area is comprised of a large multi-lane roundabout at the intersection of Lakewood Boulevard and Los Coyotes Diagonal. This area is located south of the Long Beach Airport and includes the Stearns Park, Alamitos Ridge, and Bryant School neighborhoods. The roundabout consists of a park-like setting with mature trees and grass areas comprising the central landscaped median divider island. One-story commercial uses surround the traffic circle, while mid-rise multifamily residential uses are concentrated east of the roundabout on PCH. Suburban single-family residential neighborhoods and auto-oriented commercial centers are located further north and southeast of the Traffic Circle. Residential uses located south of the Traffic Circle were generally constructed in the 1920s and 1930s, while the residential uses located further north were constructed in the 1940s and 1950s.

   Key View 11: View of 4874 East Los Coyotes Diagonal: Key View 11 shows a view looking southeast from East Los Coyotes Diagonal, east of Lakewood Boulevard, in the Traffic Circle neighborhood. As illustrated by Figure 4.1.3-11, the visual character of this neighborhood is currently defined by medium-density residential uses. This vantage point was chosen because it represents the Multi-Family Residential - Moderate (MFR-M) PlaceType, which allows medium-density residential, commercial, and community-serving uses. This vantage point represents a Major Area of Change (Promote Infill and Redevelopment to Support Transit).

7. **Downtown.** The Downtown area is the primary entertainment, commercial, and employment center in the City. This area includes the Willmore City, West End, East Village, Promenade, North Pine, and the Downtown Shoreline neighborhoods. The neighborhoods north of Ocean Boulevard within this plan area contain historic neighborhoods connected to early Long Beach history. The intersection of 10th Street and Magnolia Avenue forms the center of the Willmore

City neighborhood in the Downtown area. This neighborhood includes the Willmore/Drake Historic District, which includes the American Colony Tract developed by William Willmore, the second tract of homes developed in the City. The Downtown skyline and entertainment uses at the Pike at Rainbow Harbor are points of visual interest for both nearby and distant viewers. Many of the north-south roadways in the City terminate at Ocean Boulevard in the Downtown area. Commercial and entertainment venues are located throughout the area, with a concentration of these types of uses on Pine Avenue and the Pike at Rainbow Harbor. Building heights vary in this community plan area and are substantially higher than the other areas within the City. The four tallest buildings in the downtown area range from 20 to 30 floors and consist of office and high-density residential buildings along Ocean Boulevard, including City Hall (refer to Figure 4.1.1, Downtown Aerial View). This area maintains its urbanized downtown character through minimal building setbacks, mixed-use buildings, and transit-oriented development.

Key View 12: View of 1056 Pacific Avenue: Key View 12 shows a view looking northwest from Pacific Avenue, north of 10th Street, in Downtown Long Beach. As illustrated by Figure 4.1.3-12, the visual character of this neighborhood is currently defined by medium-density residential uses and commercial uses of varying intensities. This vantage point was chosen because it represents the Downtown (DT) PlaceType, which allows high-density, mixed-use development. This vantage point represents a Major Area of Change (Continue Downtown Development).

Key View 13: View from East Shoreline Drive: Key View 13 shows a view looking southeast from East Shoreline Drive in Downtown Long Beach. As illustrated by Figure 4.1.3-13, the visual character of this neighborhood is currently defined by recreational uses and views of the Pacific Ocean. This vantage point was chosen because it represents an aesthetic resource. This vantage point is not within a Major Area of Change and does not include a future viewshed rendering.

8. **Midshore.** The Midshore area is comprised of Alamitos Beach, Rose Park, Franklin School, Bluff Heights, and Bluff Park. Midshore contains a mix of low-density historic residential districts (bungalows developed in the 1920s); however, many of these homes were replaced with newer high-density residential units between the 1960s and 1980s. Additional high-rise multifamily developments are located along Ocean Boulevard. Generally, these high-rise developments range from 10- to-20 stories in height. While these developments have been developed to significantly greater heights than surrounding residential uses, these buildings are generally lower in height and scale than similar uses in the adjacent Downtown area. Commercial uses in this area are concentrated along east-west corridors (e.g., Broadway, 3rd Street, 4th Street, and 7th Street). These commercial areas contain a mix of historic and contemporary architecture. The overall height of commercial buildings within the area ranges from one- to two-stories, with a general increase in building heights on the south side of Ocean Boulevard.

Key View 14: View of 1911-1990 East 7th Street: Key View 14 shows a view looking northeast from East 7th Street and Cherry Street in the Midshore neighborhood. As illustrated by Figure 4.1.3-14, the visual character of this neighborhood is currently defined by low-intensity commercial uses and medium-density residential uses. This vantage point was chosen because it represents the Neighborhood-Serving Community - Moderate (NSC-M) PlaceType, which allows medium-density, mixed-use development. This vantage point represents a Major Area of Change (Promote Infill and Redevelopment to Support Transit).

Key View 15: View from East 1st Street: Key View 15 shows a view looking east from East 1st Street in the Midshore neighborhood. As illustrated by Figure 4.1.3-15, the visual character of this neighborhood is currently defined by low-density residential uses. This vantage point was chosen because it represents an historic district. This vantage point is not within a Major Area of Change and does not include a future viewshed rendering.

Key View 16: View from Ocean Boulevard: Key View 16 shows a view looking southwest from Ocean Boulevard in the Midshore neighborhood. As illustrated by Figure 4.1.3-16, the visual character of this neighborhood is currently defined by recreational uses and views of the Pacific Ocean. This vantage point was chosen because it represents an aesthetic resource. This vantage point does not represent a Major Area of Change and does not include a future viewshed rendering.

9. **Southeast.** The Southeast area is comprised of Alamitos Heights, Belmont Heights, Belmont Shore, Belmont Park, Naples, Peninsula, Recreation Park, University Park Estates, and the SEASP neighborhoods. The Southeast area is characterized by residential, commercial, and maritime uses. The Alamitos Bay and supporting uses are largely concentrated in the southern portion of this area and maintain a mix of commercial uses among other establishments to support the maritime activities in the bay. The Belmont Shore area is comprised of low-density commercial and residential uses, with scattered entertainment and office uses. The corridor along 2nd Street serves as a popular designation as it contains a variety of retail and restaurant uses within a pedestrian-oriented streetscape. In addition to development along 2nd Street, the Naples neighborhood is unique within the Southeast area as it is comprised of residential uses and three artificial islands connected by high-arching bridges. Due to the proximity of the homes within this neighborhood to the water, boat docks and maritime uses also serve to characterize the visual character of the Naples neighborhood. The Southeast area is also characterized by large open space and recreational uses, predominantly along 7th Street and PCH, and the SEASP neighborhood. The SEASP area is generally comprised of low-density, auto-dominated commercial areas, the Los Cerritos Wetlands, the Alamitos Bay Marina, and the Alamitos Bay Landing. As evidenced above, development in the Southeast community plan area varies by type and architectural style, but largely remains at a one- or two-story scale.

Key View 17: View of 3980 Ocean Boulevard: Key View 17 shows a view looking southwest from Ocean Boulevard and Termino Avenue in Southeast Long Beach. As illustrated by Figure 4.1.3-17, the visual character of this neighborhood is currently defined by commercial uses of varying intensities and medium-density residential uses. This vantage point was chosen because it represents the Waterfront (DT) PlaceType, which allows high-density, mixed-use development. This vantage point represents a Major Area of Change (Redevelop to Highest and Best Use).

Key View 18: View from East Ocean Boulevard: Key View 18 shows a view looking southeast from East Ocean Boulevard in Southeast Long Beach. As illustrated by Figure 4.1.3-18, the visual character of this neighborhood is currently defined by low-intensity commercial uses, recreational uses, and views of the Pacific Ocean. This vantage point was chosen because it represents an aesthetic resource. This vantage point is not within a Major Area of Change and does not include a future viewshed rendering.

Key View 19: View from Studebaker Road: Key View 19 shows a view looking southwest from Studebaker Road in Southeast Long Beach. As illustrated by Figure 4.1.3-19, the visual character of this neighborhood is currently defined by open space. This vantage point was chosen because it represents a Major Area of Change (More Open Space) but does not include a future viewshed rendering.

As noted above, the structures in each neighborhood vary in height, scale, massing, and architectural features, with no distinguishable or consistent architectural theme across the entire City.

Existing Lighting and Glare. Glare results from reflected light caused by sunlight or artificial light reflecting from highly finished surfaces (e.g., window glass, mirrored finishes, or brightly colored surfaces). Land uses that are typically sensitive to excess light and glare include residential, hospitals, senior housing, and other types of uses where excessive light and glare may disrupt sleep. In addition, light and glare may interfere with the vision of drivers.

Nighttime lighting that is present in the City consists of streetlights and vehicle headlights on nearby roadways; building facade and interior lighting; and pole-mounted lighting in the parking areas. However, it should be noted that the most significant nighttime lighting present in the City is associated with regional-serving uses such as the Port of Long Beach, the Long Beach Airport, and entertainment activities at the Pike at Rainbow Harbor. Because the planning area includes the entire 50 square miles within the City limits, the planning area itself also contains significant nighttime lighting associated with the operations of existing land uses. Existing uses in the City also consist of building facades that use reflective materials, such as glass and mirror, which also contribute to glare within the City.

Existing Shade/Shadow. As previously stated, shadow-sensitive uses include routinely used outdoor spaces associated with residential, recreational, or institutional land uses; commercial uses. Mid- to high-rise buildings located throughout the planning area are the primary source of prolonged shadows within the planning area.

4.1.5 Regulatory Setting

4.1.5.1 Federal Policies and Regulations

No federal policies or regulations pertaining to aesthetics are applicable to the proposed project.

4.1.5.2 State Policies and Regulations

Caltrans Scenic Highway Program. The California Department of Transportation (Caltrans) Scenic Highway Program protects the natural scenic beauty of the State's highways and corridors through its designated scenic highways throughout the State. Caltrans defines a scenic highway as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality. Other considerations given to a scenic highway designation include how much of the natural landscape a traveler may see and the extent to which visual intrusions degrade the scenic corridor.

As described further below (Threshold 4.1.1), no officially designated scenic highways are located within the planning area; however, PCH (State Route 1 or SR-1) is eligible for designation.

California Coastal Act. The California Coastal Act (CCA; Public Resources Code [PRC] 30000) of 1976 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; (4) ensure priority for coastal-dependent development over other development on the coast; and (5) encourage State and local cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses in the Coastal Zone.

The project includes the entire area within the City's limits, including the Coastal Zone, which is regulated by the California Coastal Commission (CCC) under the CCA. Section 30251 of the CCA requires development to be located 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. Section 4.4, Land Use and Planning, of this Draft Recirculated EIR addresses these CCA requirements that pertain to aesthetics and are applicable to the proposed project.

California Code, Public Resources Code Section 21099. PRC Section 21099 requires the Office of Planning and Research (OPR) to develop revisions to the *State CEQA Guidelines* establishing criteria for determining the significance of transportation impacts of projects within transit priority areas, which are areas within 0.5 mile of a major transit stop. Such criteria should promote a reduction of greenhouse gas (GHG) emissions, the development of multimodal transportation networks, and a diversity of land uses. Within transit priority areas, aesthetic impacts related to residential, mixed-use residential, or employment center projects on an infill site would not be considered significant impacts on the environment.

4.1.5.3 Local Policies and Regulations

City of Long Beach General Plan Conservation Element. The City's Conservation Element (1973) addresses the conservation and enhancement of the City's natural and scenic resources. Goals and policies presented within the Conservation Element are intended to optimize and manage the City's resources. The following goals and policies related to visual resources are presented in the Conservation Element:

> **GOAL:** To create and maintain a productive harmony between man and his environment through conservation of natural resources and protection of significant areas having environmental and aesthetic value.
>
> **GOAL:** To identify and preserve sites of outstanding scenic, historic, and cultural significance or recreational potential.

City of Long Beach General Plan Open Space and Recreation Element. The City's Open Space and Recreation Element (2002) addresses the preservation of open space and recreation. Goals and policies presented within the Open Space and Recreation Element are intended to manage the use and enhancement of the City's parklands. The following goals and policies related to visual resources are presented in the Open Space and Recreation Element:

> **Policy 1.2:** Protect and improve the community's natural resources, amenities, and scenic values, including nature centers, beaches, bluffs, wetlands, and water bodies.

City of Long Beach General Plan Scenic Routes Element. The City's Scenic Routes Element (1975) addresses the protection of valuable viewsheds throughout the City, with special emphasis on providing groundwork for the Urban Design Element (UDE) and the Mobility Element. The goals and policies presented within the Scenic Routes Element are intended to protect the scenic value of designated routes and corridors in the City. The following goals and policies related to visual resources are presented in the Scenic Routes Element (SRE):

> **GOAL:** Preserve and enhance natural and man-made aesthetic resources within and visible from scenic corridors.
>
> > **Policy 1:** Develop land use regulations and apply standards to control and enhance the quality of new and existing development within the scenic corridors of designated routes.
> >
> > **Policy 2:** Remove or screen visual pollution from designated scenic route corridors.
> >
> > **Policy 3:** Require the development and use of aesthetic design considerations in any necessary modification of roadways and appurtenances for the enhancement of all designated scenic routes.
>
> **GOAL:** Strengthen the City's image, and thereby, the well-being of all its citizens.
>
> > **Policy 1:** Increase the visibility of aesthetic features, natural and man-made, to develop a better awareness of the observer's location within the City and a better understanding of the City's function and meaning.
> >
> > **Policy 2:** Develop standards of design articulation and continuity in sequential form and graphic representation that will unify and define the scenic route system.
> >
> > **Policy 3:** Promote the awareness and use of the amenities of scenic routes for all segments of the population.
>
> **GOAL:** Link and enhance recreational, cultural, and educational opportunities through a network of scenic corridors.

Policy 1: Establish and maintain urban scenic routes to provide access to interesting and aesthetic natural and man-made features, historical and cultural sites, industrial and educational sites, and urban open space areas.

Policy 2: Cooperate in the establishment of an inter-urban, inter-county scenic route system.

Policy 3: Maximize within the scenic corridors the compatible multi-purpose objectives of open space planning, such as recreation, conservation, public health and safety, and preservation of scenic-aesthetic amenity.

GOAL: Create a system of scenic routes through joint public and private responsibility.

Policy 1: Increase governmental commitment to the designation of scenic routes and protection of scenic corridors.

Policy 3: Improve scenic route coordination and implementation procedures between all levels of government.

It should be noted that while the goals and policies listed above are applicable to the proposed project, approval of the proposed UDE would replace the existing SRE, thereby allowing the UDE to serve as the guiding policy document for architecture, design, and aesthetic treatments throughout the City. The City's SRE (Scenic Highways) (1973) designated five types of scenic routes throughout the City and provided a description of routes that should be considered for designation as scenic routes and highways. The goals and policies pertaining to scenic routes, as identified in the SRE, have been incorporated into the General Plan as part of street character change in the Mobility Element (October 2013).

Long Beach Municipal Code. Title 21, Zoning, of the Long Beach Municipal Code includes property development standards, as well as design guidelines, for development projects within the City. Among the aspects of development regulated by the Municipal Code are types of allowable land uses, setback and height requirements, landscaping, walls, fencing, signage, access, parking requirements, storage areas, and trash enclosures. The Long Beach Municipal Code also provides performance standards for various land use types to measure development projects' consistency with such regulations.

Lighting Standards. As described in the City's Zoning Code, all lighting proposed as part of a parking lot and/or garage shall be illuminated with lights directed and shielded to prevent light and glare from intruding onto adjacent sites. All lights shall be illuminated to the applicable standards of the Illuminating Engineers Society. Additional details pertaining to parking lot lighting are provided in Section 21.41.259, Parking areas-Lighting, of the City's Zoning Code.

Landscaping Design Guidelines. Chapter 21.42, Landscaping Standards, of the City's Zoning Code establishes landscape guidelines for development projects. As described in this section, the City requires that landscaping be composed of a minimum of 90 percent drought-tolerant and native

plant materials in the interest of promoting water conservation. If the proposed planted area contains less than 90 percent of land covered with very-low to low water-use planting, a Landscape Document Package showing the Estimated Total Water Usage (ETWU) of all proposed plantings is required for City review and approval. The landscaping standards would be applicable to all projects requiring site plan review.

4.1.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines* Based on these thresholds, implementation of the proposed project would have a significant adverse impact related to aesthetics if it would:

Threshold 4.1.1: Have a substantial adverse effect on a scenic vista;

Threshold 4.1.2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;

Threshold 4.1.3: In a non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or

Threshold 4.1.4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

According to the Caltrans Scenic Highway Mapping System, there are no State-designated scenic highways in the planning area; however, PCH is considered to be an Eligible State Scenic Highway.[1]

Although there are no State-designated scenic highways in the City, the City's existing General Plan SRE designates local scenic routes. Specifically, the SRE identifies the following four scenic route classifications: (1) the Recreational Scenic Route, (2) the Historical-Cultural Scenic Route, (3) the Industrial-Educational Scenic Route, and (4) the Bicycle Scenic Route. In addition, the City's Open Space and Recreation Element requires protection of scenic features in the City, including beaches, bluffs, wetlands, and water bodies. Due to their prevalence throughout the City, these scenic features are viewable from the established local scenic routes.

Implementation of the proposed project would not result in the physical development of any buildings or structures that would result in the permanent obstruction of the scenic routes identified above. However, project approval would facilitate future development that could result in the obstruction of these scenic routes. Although the proposed project would facilitate new development throughout the City, it would mainly focus on development efforts within the Major Areas of Change and in areas that are currently underutilized or are currently vacant. In addition, future development

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1 Caltrans Scenic Highway Mapping System. Website: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ (accessed September 25, 2018).

2 Conditions described in Section 4.1.3, Existing Environmental Setting, have also been modified to include changes since May 2015.

facilitated by project approval would be designed according to the development strategies, policies, and standards in the proposed UDE, which would aim at preserving scenic routes established throughout the City. With implementation of the proposed UDE, Ocean Boulevard and Livingston Drive would continue to be City-designated scenic routes. The proposed UDE also includes Policy UD 18-10, which calls for sustaining the policy and design principles of the SRE. Therefore, the project would not result in impacts related to the substantial damage of scenic resources within a State-designated highway. This threshold is not discussed further in this Recirculated Draft EIR (Threshold 4.1.2).

4.1.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures and would not include any project design features related to aesthetics. Although there are no compliance measures and project design features related to aesthetics, the LUE and UDE Goals, Strategies, and Policies are intended to reduce the visual impacts of future development envisioned under the proposed project.

4.1.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following proposed Goals, Strategies, and Policies are applicable to the analysis of Aesthetics and would replace existing goals, strategies, and policies outlined in the City's existing LUE and SRE following project approval:

Land Use Element.

STRATEGY No. 7: Implement the major areas of change identified in this Land Use Plan (Map LU-20).

- **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 7-8:** Ensure infill development is compatible with surrounding established and planned uses.
- **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.

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.

Urban Design Element (2018).

STRATEGY No. 1: Improve function and connectivity within neighborhoods and districts.

- **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.

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.

STRATEGY No. 5: Integrate healthy living and sustainable design practices and opportunities throughout Long Beach.

- **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.

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 7-3:** 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.

STRATEGY No. 8: Capitalize on urban design techniques that support economic development, prosperity, and the preservation of existing businesses throughout the community.

- **Policy UD 8-2:** Provide flexibility in building form and site design to encourage development that supports economic activity, entrepreneurship, and small businesses.

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.

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 streetlights.
- **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.

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 12-4:** Emphasize gateways into Long Beach at freeways and important transportation hubs, such as the Long Beach Airport, Blue Line stations, 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.

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 13-4:** 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.

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 14-5:** 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 Nos. 34–35) to create a comprehensive urban fabric.
- **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.

STRATEGY No. 15: Consider vacant parcels as infill opportunities.

- **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.

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.

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 and expand 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.

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.

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 multifamily 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 multifamily 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 20-7:** Encourage walk-up entries, patios, and balconies to maintain "eyes on the street" and encourage active ground floor uses along major street frontages.

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 sensitivity to existing residential neighbors.

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 22-6:** 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.

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 23-6:** 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.

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 24-3:** Promote the incorporation of buffers between residential and industrial uses, such as surface parking, landscaped open space buffers, and lower buildings.
- **Policy UD 24-6:** 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.

STRATEGY No. 25: Protect and enhance established Neo-Industrial PlaceType.

- **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 25-8:** Integrate sustainable design strategies into all development or redevelopment, including new exterior materials or design features.

STRATEGY No. 26: Protect and enhance established Regional-Serving Facility PlaceType.

- **Policy UD 25-1:** 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 23-3:** 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.

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 27-3:** 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.

STRATEGY No. 28: Protect and enhance established Waterfront PlaceType.

- **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 28-4:** Develop attractive gateway elements to invite visitors in to explore the unique offerings found in each of the Waterfront PlaceTypes.
- **Policy UD 28-5:** Promote and preserve street design characteristics unique to each Waterfront PlaceType.
- **Policy UD 28-8:** Establish signage that is clear and controlled.
- **Policy UD 28-10:** Encourage pedestrian-scaled building details featuring well-articulated building facades with quality building materials and workmanship.

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.

STRATEGY No. 31: Provide a variety of public spaces throughout the City.

- **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.

STRATEGY No. 35: Building design and form shall define street walls that contribute to great streets and vibrant pedestrian environments.

- **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 35-4:** Emphasize pedestrian orientation in site and building design to define the public realm and activate sidewalks and pedestrian paths.
- **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.

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."

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.

- **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.

STRATEGY No. 38: Enhance the functionality within each PlaceType by improving the character and functionality of each Street Type.

- **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 38-4:** 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 38-7:** 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 38-9:** 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.

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.

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 40-3:** 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 40-6:** Enhance driveway access points with ornamental landscaping, accent paving, and lighting.

STRATEGY No. 41: Connect neighborhoods, corridors, and centers by maintaining and providing for walkable blocks.

- **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.

4.1.8 Project Impacts

Threshold 4.1.1: Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. The planning area is almost entirely developed and is characterized by an urban landscape consisting of residential, commercial, industrial, open space, industrial, institutional, educational, and mixed uses. As previously described, the visual setting of the planning area is primarily characterized by areas of low- to moderate-scale buildings and structures; however, the Downtown area is characterized by high-rise buildings that are greater in height, density, and scale than other surrounding areas. Figure 4.1.1, Downtown Aerial View, illustrates the density and scale of the Downtown area.

The proposed UDE notes important scenic vistas from public roadways within the City, such as views along Alamitos Avenue 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 skyline; beaches and marinas; and Los Coyotes Diagonal to the distant San Gabriel Mountains. Additional visual resources noted in the UDE include distant views of the San Gabriel, San Bernardino, and Santa Ana Mountains, and views of the Los Cerritos Wetlands, the Jack Dunster Marine Biological Reserve, Golden Shore Marine Biological Reserve Park, and the Dominguez Gap Wetlands.

The proposed project assumes that development patterns envisioned under the proposed PlaceTypes would primarily occur within the eight Major Areas of Change and would be the basis for future development and redevelopment activities in the City. Incremental intensification of existing and proposed land uses would occur as a result of project implementation, and future development would be scaled to complement adjacent land uses, consistent with Policies LU 7-8, UD 14-1, and UD 14-2.

In an effort to protect scenic views afforded to the planning area while also accommodating the projected increases in population, housing, and employment in the City, the proposed project establishes height and density/intensity limitations for each PlaceType (refer to Figure 3.4, PlaceType Height Limitations, and Table 4.1.A, PlaceType Heights). The Regional-Serving Facility PlaceType (28 to 150 ft; unlimited height in some areas along Long Beach Boulevard), Downtown PlaceType (38 to 240 ft), and Waterfront PlaceTypes (35 to 600 ft) would allow for the maximum height limitations, which would allow proposed uses in these areas to have prominent views of the Port of Long Beach, the Pacific Ocean, Rainbow Harbor, the Los Angeles River, and open space uses. Views of the proposed uses within these three PlaceTypes from other areas within the City would consist of skyline development silhouettes from public vantage points. While views of scenic resources afforded to the City may be partially obstructed following future development (most of which would be infill development) as allowed by the proposed project, existing development in these areas currently inhibits views of scenic vistas as the City is almost entirely developed and consists of urbanized development along the coastline (as shown in Figure 4.1.1). Further, future development facilitated by project approval would be designed according to the development strategies, policies, and standards in the proposed UDE (described below) that would be aimed at guiding the aesthetic character of new development in a manner that would not significantly inhibit or obstruct scenic vistas in the planning area.

Table 4.1.A: PlaceType Heights

PlaceType	Maximum Height[1]
Open Space	2 stories
Founding and Contemporary Neighborhood[1]	2 stories, (varies by area[2])
Multi-Family Residential: Low	4 stories
Moderate	6 stories
Neighborhood-Serving Centers and Corridors: Low	4 stories
Moderate	7 stories
Transit-Oriented Development Low	5 stories
Moderate	10 stories
Community Commercial	7 stories
Industrial	65 ft
Neo-Industrial	65 ft
Regional-Serving Facility	Approx. 28 to 150 ft (see Figure 3.5, PlaceType Height Limits)
Downtown (see Downtown Plan)	Approx. 38 to 240 ft (see Downtown Plan)
Waterfront	Approx. 35 to 600 ft (varies by area[3])

Source: Proposed Long Beach General Plan Land Use Element (March 2018) (Appendix H).

[1] This table represents maximum heights citywide for each PlaceType; further height restrictions citywide for individual parcels are shown in Figure 3.5 (PlaceType Height Limits).

[2] Height limits may vary within PlaceType areas. See Figure 3.5 (PlaceType Height Limits) for maximum height.

[3] See Figure 3.5 (PlaceType Height Limits) for maximum height.

ft = foot/feet

The proposed UDE includes development strategies and policies that consider the context of existing scenic vistas and neighborhoods when designing and implementing future projects. These identified strategies include, but are not limited to, the beautification and improvement of the efficiency of corridors, gateways, and private and public spaces (Strategy No. 2); the protection and enhancement of historic resources, distinguishing architecture and other features that contribute to the unique character and identity of each neighborhood (Strategy No. 9); the provision of building types and forms that contribute to the PlaceType they are sited within, including the implementation of buffering measures and thoughtful development patterns (Strategy No. 14); the improvement and preservation of the unique and fine qualities of Long Beach to strengthen the City's image and eliminate undesirable or harmful visual elements (Strategy No. 18); the development of a specific role and identity for a street, so that it contributes to the neighborhood's character while supporting specific, functional requirements (Strategy No. 35); and the design of frontages with street walls, contributing to making an inviting transition between public and private space (Strategy No. 36). Although future development facilitated by project approval would modify views to and from areas throughout the City, such as potentially blocking distant views of the San Gabriel Mountains from public vantage points, project applicants would be required to demonstrate consistency with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at preserving scenic vistas in the planning area. Therefore, potential impacts of the proposed project on scenic vistas would be less than significant, and no mitigation would be required.

Threshold 4.1.3: In a non-urbanized area, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. As previously noted, the planning area is currently characterized as a built-out urban environment. The land use plan of the proposed project would target land use changes that could affect the existing visual character and quality of each area targeted for change. For example, the proposed project would alter the visual character within the eight Major Areas of Change by encouraging the provision of more open space, conversion of industrial uses to neo-industrial uses, conversion of industrial uses to commercial uses, promoting regional-serving uses, promoting transit-oriented development, promoting development within the Downtown area, promoting infill and redevelopment to support transit, and revitalizing areas along the waterfront. Impacts to the visual character of the planning area (e.g., higher-density development in designated locations) and the visual compatibility between proposed PlaceTypes and adjacent land uses could occur.

The proposed project would allow for future development projects that would be consistent with the existing urbanized setting of the City. These future changes within the built environment will involve the replacement of existing structures with new structures including high-quality materials and design required under the UDE. While these changes may be widespread over time, they are not considered degrading to the City's visual character as intended by the meaning of the threshold. In addition, in many circumstances such updates and changes may result in improvements to the visual quality of the built environment.

The following discussion outlines project-related changes in the visual character of the nine established Community Plan Areas, with a particular emphasis on changes that would occur within the eight Major Areas of Change. Where prominent changes are anticipated to occur, renderings of the post-project condition have been provided to represent new development envisioned under the proposed project. However, key views without renderings have also been included to illustrate where several areas of the City are not anticipated to experience significant changes in land use patterns that would affect the existing visual character.

North Long Beach

Key View 1: View of 2400 East Artesia Boulevard: Key View 1 (Figure 4.1.3-1) shows a view looking northwest from East Artesia Boulevard and Paramount Boulevard in North Long Beach. This vantage point was chosen because it represents a Major Area of Change (Convert to Neo-Industrial Uses).

As previously stated, the aesthetic character depicted in Key View 1 is characteristic of low-intensity industrial, manufacturing, and commercial uses. This view can be considered representative of other areas throughout the City that propose to convert existing uses to Neo-Industrial uses.

Following project implementation, new development within this area is anticipated to consist of medium-intensity neo-industrial development. The Neo-Industrial PlaceType encourages light industrial activities associated with innovative start-up businesses and creative design offices, and also permits limited retail and live/work housing opportunities. The maximum building height within the Neo-Industrial PlaceType would be 65 ft for the area depicted in this key view, which would be taller than the existing one-story structures in this area. However, future projects allowed by the proposed LUE and UDE would enhance the overall visual quality of existing industrial areas as new developments would encourage the provision of visual screens between live-work units and existing industrial uses (Policy UD 25-2) and the enhancement of on-site sidewalk streetscape landscaping, signage, and other enhancements (Policy UD 25-5). The proposed project would improve the visual character and quality of areas targeted for Neo-Industrial uses through the design, streetscape, and landscape features described above. The overall visual quality within this Area of Change would be improved as a result of project implementation. Moreover, future projects occurring within the Neo-Industrial PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 2: View of 5368 Atlantic Avenue: Key View 2 (Figure 4.1.3-2) shows a view looking southeast from Atlantic Avenue, south of Market Street, in North Long Beach. This vantage point was chosen because it represents the Neighborhood-Serving Center or Corridor - Low (NSC-L) PlaceType, which allows mixed-use development. Due to similarities, this key view is also representative of the Neighborhood-Serving Center or Corridor - Moderate (NSC-M) PlaceType, which allows comparable development at a greater intensity. This vantage point is not within a Major Area of Change.

As previously stated, the aesthetic character of areas within this key view consists of commercial and light-industrial uses at varying intensities. This view can be considered representative of other low- and medium-intensity neighborhood-serving areas throughout the City.

Following project implementation, new development envisioned within this area would include mixed-use development allowed under the Neighborhood-Serving Center or Corridor – Low and Moderate PlaceTypes. These PlaceTypes are composed of low- and medium-rise, low- and medium-intensity mixed-use commercial centers and corridors designed to meet needs for goods and services close to residential areas. These PlaceTypes would allow for maximum building heights of four stories (NSC-L) and seven stories (NSC-M); however, the area depicted in Key View 2 allows a maximum building height of three stories. As such, new development envisioned under these PlaceTypes would be taller than the building heights of the existing structures. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). In order to ensure the orderly transition between new mixed-use development envisioned under the proposed project and existing low-density neighborhoods, future projects would be required to protect and enhance established neighborhoods (Strategy No. 21). Specifically, new higher intensity development would be adjacent to transit stations and would step down in height and scale when adjacent to existing housing or lower scale buildings (Policy UD 21-1). This gradual increase in building heights would enable continuity in form and a pattern of building articulation. Further, the visual quality of this area would be enhanced by streetscape improvements (Policy UD 21-3 and 21-4) and the gateway elements that help define neighborhood edges and provide transitions into center development along lengthy corridors (Policy UD 21-2). Although this area does not represent a Major Area of Change, the development of new buildings and streetscape improvements would improve existing blighted and underutilized parcels in this area. Moreover, future projects occurring within the NSC-L PlaceType would be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, the overall visual character of areas within these neighborhood-serving PlaceTypes would be improved through the design, streetscape, and landscape features described above. Impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Bixby Knolls

Key View 3: View from Cherry Avenue: Key View 3 (Figure 4.1.3-3) shows a view looking northeast from Cherry Avenue in Bixby Knolls. This vantage point was chosen because it represents a Major Area of Change (Transition from Industrial Uses to Commercial Uses).

As previously stated, the aesthetic character of areas within this key view consists of industrial uses that would be converted to commercial and office uses under the proposed project. This view can

be considered representative of other areas throughout the City that propose to convert existing industrial uses to commercial uses.

Following project implementation, new development within this area would be representative of the Community Commercial PlaceType, which would allow for low- and medium-intensity commercial and office uses. The Community Commercial PlaceType allows maximum building heights of seven stories; however, the maximum building height allowed within this area would be three stories, which would be slightly taller than building heights of existing structures. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). While the proposed height limits under the proposed LUE would result in a substantial change of the existing visual character shown in Key View 3, the transition to new uses proposed within these areas would include sidewalk improvements, ornamental landscaping, and streetscape furnishings and amenities to improve the visual character of this area (Policy UD 23-3). In addition, new commercial uses in these areas would be developed to provide adequate visual transitions from commercial uses to adjacent residential uses (Policy UD 23-1). For example, new commercial uses would include low walls or hedges and streetscape improvements to screen parking lots and enhance the overall visual character of these areas (Policies UD 23-3, UD 23-4, and UD 23-6). Therefore, the overall visual quality of this area would be improved with implementation of the proposed project. Although future development may impede some distant views of the San Gabriel Mountains (depending on the location of such development), the overall visual quality within this Area of Change would be improved through the streetscape and landscape features described above. Moreover, future projects occurring within the Community Commercial PlaceType would be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, overall impacts to the visual character and quality of areas targeted for development of commercial uses would be less than significant, and no mitigation would be required.

Wrigley and Westside

Key View 4: View of the 3100 Block of Cedar Avenue: Key View 4 (Figure 4.1.3-4) shows a view looking north on the 3100 block of Cedar Avenue in the Wrigley neighborhood. This vantage point represents the Founding and Contemporary Neighborhood (FCN) PlaceType, which allows low-density residential development, and does not represent a Major Area of Change.

As previously stated, the existing aesthetic character of areas depicted in this key view is defined by low-density residential uses and tree-lined roadways. This view can be considered representative of other low-density residential neighborhoods throughout the City.

Following project implementation, new development envisioned within the FCN PlaceType would include low-density residential uses at a maximum building height of two stories). As such, the nature and scale of the proposed uses under the Founding and Contemporary Neighborhood PlaceType would be similar to existing uses within established residential neighborhoods located throughout the City. Future development within the PlaceType would aim to protect and enhance established Founding and Contemporary Neighborhoods (Strategy No. 19) and would include features that would promote the uniqueness of each neighborhood (e.g., preservation of trees, historic structures, architectural details, appropriate building scale, and cultural amenities [Policy UD 19-4]). New development would be designed to respect the height, massing, and open space characteristics of the existing neighborhood (Policy UD 19-3). The project would also require that new projects within this PlaceType 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 (Policy UD 19-5). With implementation of these features, the overall visual quality of the viewshed would be improved and protected with implementation of the proposed project. Although this area does not represent a Major Area of Change, areas targeted for FCN uses would be improved through the design, streetscape, and landscape features described above. Moreover, future projects occurring within the FCN PlaceType would be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, overall impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 5: View of 701 West Willow Street: Key View 5 (Figure 4.1.3-5) shows a view looking northeast from West Willow Street and Orange Avenue in the Wrigley neighborhood. This vantage point was chosen because it represents the Neighborhood-Serving Center or Corridor - Low (NSC-L) PlaceType, which allows mixed-use development. Due to similarities, this key view is also representative of the Neighborhood-Serving Center or Corridor - Moderate (NSC-M) PlaceType, which allows comparable development at a greater intensity. This vantage point does not represent a Major Area of Change.

As previously stated, the existing aesthetic character of areas depicted in this key view is defined by low-intensity neighborhood-serving commercial uses. This view can be considered representative of other low-intensity neighborhood-serving areas throughout the City.

As depicted by Key View 5, new development within this PlaceType would include a mix of uses and would be representative of other Neighborhood-Serving Center or Corridor PlaceTypes throughout the City. The maximum building heights within these PlaceTypes would be four stories (NSC-L) and seven stories (NSC-M); however, the maximum building height allowed in the key view area would be three stories. Given the relatively low to moderate building heights and density in this area, future buildings constructed at the maximum building heights would be visibly taller than many of the existing structures in these areas. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For

example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). In addition, future projects within these PlaceTypes would be required to be consistent with Policies UD 21-1 through UD 21-4, which require streetscape improvements and transitions between buildings to maintain the scale, massing, and proportion of proposed development by concentrating higher building intensity nearest the center of the PlaceType and adjacent to transit stations, with housing or lower scale buildings at the periphery. Although this area does not represent a Major Area of Change, the overall visual character of areas targeted for development of neighborhood-serving uses would be improved through the design, streetscape, and landscape features described above. Moreover, future projects occurring within the NSC PlaceType would be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Eastside

Key View 6: View of 3490 Spring Street: Key View 6 (Figure 4.1.3-6) shows a view looking northeast from Spring Street, west of Redondo Boulevard, in Eastside Long Beach. This vantage point was chosen because it represents the Regional-Serving Facility (RSF) PlaceType and a Major Area of Change (Promote Regional-Serving Uses).

As illustrated by Key View 6, the existing visual character of the area depicted is defined by low-intensity commercial and office uses. This view can be considered representative of other low- to medium-intensity regional-serving areas throughout the City.

Following project implementation, new development within this area would consist of three- to four-story buildings supporting regional-serving uses. Due to height limitations established by the FAA for areas around the Long Beach Airport, new development within most areas designated as the Regional-Serving Facility PlaceType would be consistent with existing land use patterns in these areas of the City. Although some areas, such as the area depicted in Key View 6, could be developed at building heights that would be taller than existing buildings, the project would continue to promote regional-serving uses at maximum building heights determined by the FAA. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). In order to ensure the compatibility with the surrounding environment, future regional facilities would be required to enhance the edges using streetscape enhancements and architectural treatments to avoid abrupt transitions (Policy UD 26-1). In addition, streetscape improvements, including shade trees and pedestrian amenities along main streets, would reduce incompatibility with neighboring

uses by orienting the facility toward the sidewalk (Policy UD 26-3). Design features incorporating thematic elements would link adjacent areas with regional-serving facilities, reinforcing community connections to these places (Policy UD 26-4). Compatibility with neighboring uses would be enhanced in this area, and consequently, the overall visual quality of this Major Area of Change would be improved with implementation of the proposed project. Moreover, future projects occurring within the RSF PlaceType would be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, overall impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 7: View of 3455 North Studebaker Road: Key View 7 (Figure 4.1.3-7) shows a view looking northwest from North Studebaker Road, west of Wardlow Road, in Eastside Long Beach. This vantage point was chosen because it represents the Founding and Contemporary Neighborhood (FCN) PlaceType, which allows a maximum of two-story, low-density residential development. This vantage point does not represent a Major Area of Change.

As previously stated, the existing aesthetic character of areas depicted in this key view is defined by low-density residential uses. This view can be considered representative of other low-density residential neighborhoods throughout the City.

Following project implementation, new development envisioned within the Founding and Contemporary Neighborhood PlaceType would include low-density residential uses at a maximum building height of two stories. As such, the nature and scale of the proposed uses within Founding and Contemporary Neighborhoods would be similar to existing uses within established residential neighborhoods located throughout the City. As depicted in Key View 7, the Founding and Contemporary Neighborhood PlaceType allows neighborhood edges, transition areas, and key intersections to have appropriately scaled multifamily structures. Public facilities and low-intensity neighborhood-serving commercial uses are also allowed in these areas. Future development within these residential neighborhoods would aim to protect and enhance established Founding and Contemporary Neighborhood PlaceTypes (Strategy No. 19) and would include features that would promote the uniqueness of each neighborhood (e.g., preservation of trees, historic structures, architectural details, and cultural amenities [Policy UD 19-4]). New development would be sensitive to established neighborhood context, historic development patterns, and building form and scale (Policies UD 19-2). To allow for better integration, new development would be designed similarly to height, massing, and open space characteristics of the existing neighborhood while creating the appearance of single-family units for multifamily buildings (Policy UD 19-3). With implementation of these features, the overall visual quality of these neighborhoods would be improved and protected with implementation of the proposed project. Although this area does not represent a Major Area of Change, areas targeted for Founding and Contemporary Neighborhood uses would be improved through the design, streetscape, and landscape features described above. Moreover, future projects occurring within the FCN PlaceType would be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development

regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, overall impacts to the visual character and quality of these areas would be less than significant, and no mitigation would be required.

Key View 8: View of 6235 Spring Street: Key View 8 (Figure 4.1.3-8) shows a view looking northwest from Spring Street, west of Palo Verde, in Eastside Long Beach. This vantage point was chosen because it represents the Community Commercial (CC) PlaceType. This vantage point does not represent a Major Area of Change.

As previously stated, the aesthetic character of areas within this key view depicts commercial uses of varying intensities and tree-lined streets. This view can be considered representative of other low- and medium-intensity commercial areas throughout the City.

Following project implementation, new development within this area would be representative of the Community Commercial PlaceType, which would allow for low- and medium-intensity commercial and office uses. The Community Commercial PlaceType allows maximum building heights of seven stories; however, the maximum building height within this area would be two stories, which would be would be similar to existing heights within this area. As such, future development would not result in changes to distant views of the San Gabriel Mountains from public vantage points. Future development envisioned under the Community Commercial PlaceType would be required to protect and enhance established commercial uses (Strategy No. 23). Specifically, buildings would transition in scale between automobile-oriented corridors and established residential neighborhoods through the use of adjacent multiple-family residential developments (Policy 23-2). In addition, setbacks and visual/noise buffers would be used to separate automobile-oriented developments from adjacent residential neighborhoods (Policy UD 23-1). This gradual increase of building heights would enable continuity in form and a pattern of building articulation. Further, the visual quality of this area would be enhanced by streetscape improvements (Policy UD 23-3) and low walls and hedges that would help buffer pedestrians from surface parking lots (Policy UD 23-6). Although this area does not represent a Major Area of Change, areas targeted for development of commercial uses would be improved through the design, streetscape, and landscape features described above. Moreover, future projects occurring within the Community Commercial PlaceType would be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, overall impacts to the visual character and quality of areas targeted for development of commercial uses would be less than significant, and no mitigation would be required.

Central

Key View 9: View of 1750 Pacific Avenue: Key View 9 (Figure 4.1.3-9) shows a view looking west from Pacific Avenue, south of PCH, in Central Long Beach. This vantage point was chosen because it represents the Transit-Oriented Development-Low (TOD-L) PlaceType. Due to similarities, this key

view is also representative of the Transit-Oriented Development-Moderate (TOD-M) PlaceType, which allows comparable development but at a greater intensity. This vantage point represents a Major Area of Change (Promote Transit-Oriented Development Uses).

As illustrated by Key View 9, existing uses within this area include low-intensity commercial uses that are oriented towards the street. This view can be considered representative of other low- and medium-intensity transit-oriented areas throughout the City.

New projects envisioned under the Transit-Oriented Development PlaceTypes would consist of infill and redevelopment uses that would support TOD uses. The height limit along Long Beach Boulevard in this view would be a maximum of 10 stories (refer to Figure 3.5, PlaceType Height Limitations), which would be significantly taller than existing one- to four-story developments in these areas. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). In addition, the Transit-Oriented Development PlaceTypes would concentrate mixed uses and higher building intensity near the center of the development and adjacent to transit stations (Policy UD 22-3) and would encourage the massing of buildings and setbacks to transition from more intense to less intense development (Policy UD 22-1). New development projects would also be required to include the provision of streetscape improvements and pedestrian amenities (Policies UD 21-4 and UD 22-6) and plazas near bus and major transit stations (Policy UD 21-7), which would further enhance the visual character of areas proposed for development with transit-oriented uses. Therefore, the overall visual character of existing areas targeted for transit-oriented uses under the proposed project would be improved through the design, streetscape, and landscape features described above. Moreover, future projects occurring within the TOD PlaceTypes would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. For future infill projects within transit priority areas involving residential, mixed-use residential, or employment centers, aesthetic impacts would not be considered significant environmental impacts under CEQA.[1] For the reasons stated above, impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 10: View of 1006 Junipero Avenue: Key View 10 (Figure 4.1.3-10) shows a view looking northeast from Junipero Avenue and 10th Street in Central Long Beach. This vantage point was chosen because it represents the Multi-Family Residential-Low (MFR-L) PlaceType. Due to similarities, this key view is also representative of the Multi-Family Residential-Moderate (MFR-M) PlaceType, which allows comparable multifamily development at a greater density. This vantage point does not represent a Major Area of Change.

[1] As stipulated by California Public Resources Code, PRC Section 21099.

As previously stated, the aesthetic character of areas within this key view is representative of light industrial and commercial uses of varying intensities and low-density residential uses. This view can be considered representative of other low- to medium-density multifamily residential areas throughout the City.

Following project implementation, new development envisioned within the Multi-Family Residential PlaceTypes would include medium-density multiple-family residential uses at a maximum building height of four stories (MFR-L) or six stories (MFR-M); however, maximum building heights in the key view area would be limited to three stories. Given the relatively low building heights and density in this area, future buildings constructed at the maximum building heights would be visibly taller than many of the existing structures in these areas. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). In addition, future development within the Multi-Family Residential PlaceTypes would integrate multifamily residential neighborhoods with surrounding uses to encourage appropriate transitions in height and massing (Policy UD 20-1), especially when planning infill development. New development would be required to design residential buildings to reflect the historic context of surrounding neighborhoods (Policy UD 20-2). As shown in Key View 10, new development would preserve the existing urban fabric through preservation of mature trees, historic structures, and cultural amenities (Policy UD 20-5). With implementation of these features, the overall visual quality of the viewshed would be improved and protected with implementation of the proposed project. Although this area does not represent a Major Area of Change, areas targeted for multifamily residential uses would be improved through the design, streetscape, and landscape features described above. Moreover, future projects occurring within the MFR PlaceTypes would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, overall impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Traffic Circle

Key View 11: View of 4874 East Los Coyotes Diagonal: Key View 11 (Figure 4.1.3-11) shows a view looking southeast from East Los Coyotes Diagonal, south of Lakewood Boulevard, in the Traffic Circle neighborhood. This vantage point was chosen because it represents the Multi-Family Residential - Moderate (MFR-M) PlaceType, which allows residential, commercial, and community-serving uses. This vantage point represents a Major Area of Change (Promote Infill and Redevelopment to Support Transit).

As illustrated by Key View 11, existing uses within this area include medium-density residential uses and tree-lined streets. This view can be considered representative of other medium-density multifamily residential areas targeted for infill development throughout the City.

Implementation of the proposed project would promote infill development to support transit nodes. Following project implementation, new infill development envisioned within this PlaceType would include medium-density multifamily residential uses at a maximum building height of six stories. As such, the nature and scale of the proposed uses under the Multi-Family Residential - Moderate PlaceType would be substantially taller than existing uses within established residential neighborhoods located throughout the City. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). In addition, future development within the Multi-Family Residential PlaceTypes would integrate multifamily residential neighborhoods with surrounding uses to encourage appropriate transitions in height and massing (Policy UD 20-1), especially when planning infill development. As shown in Key View 11, new development would place multifamily buildings along major corridors and near transit areas to increase density over existing conditions to encourage investment and development of infill sites (Policy UD 20-3). Residential buildings would be designed to reflect the historic context of surrounding neighborhoods (Policy UD 20-2) through preservation of mature trees, historic structures, and cultural amenities (Policy UD 20-5). The overall visual quality within this Area of Change would be improved through the streetscape and landscape features described above. Moreover, future projects occurring within the MFR PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. As stated previously, aesthetic impacts would not be considered significant environmental impacts under CEQA for future infill projects within transit priority areas involving residential, mixed-use residential, or employment centers. Therefore, overall impacts to the visual character and quality of areas targeted for infill development to support transit uses would be less than significant, and no mitigation would be required.

Downtown

Key View 12: View of 1056 Pacific Avenue: Key View 12 (Figure 4.1.3-12) shows a view looking northwest from Pacific Avenue, north or 10th Street, in Downtown Long Beach. This vantage point was chosen because it represents the Downtown (DT) PlaceType. This vantage point represents a Major Area of Change (Continue Downtown Development).

As stated previously, the visual character of this neighborhood is currently defined by medium-density residential uses and commercial uses of varying intensities. This view can be considered representative of other mixed-use development in the Downtown area.

Implementation of the proposed project would continue the development pattern currently implemented in the Downtown Long Beach (see Figure 4.1.1, Downtown Aerial View and related discussion under Threshold 4.1.1 above). Maximum building heights established in this area under the LUE would be approximately 240 ft, which is slightly greater than the height of existing buildings in the Downtown area. However, many areas within the Downtown PlaceType would require much shorter building heights; for example, the area depicted in Key View 12 allows a maximum building height of five stories. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). Future development would promote the importance of transitions between uses and developments in the Downtown PlaceType, given the small block sizes and mix of different uses (Policy UD 27-1). For example, structures proposed in the Downtown area, such as those proposed at a maximum height of 240 ft on the south side of Ocean Boulevard, would be consistent with the height and scale of the nearby multifamily residential dwellings. Additionally, views of future development would be enhanced by streetscape improvements (i.e., ornamental landscaping and street furnishings) and well-articulated building facades featuring high-quality building materials (Policy UD 27-4).Therefore, because existing buildings in the Downtown area typically have higher building heights than other portions of the City and because the proposed project would include aesthetic improvements within the Downtown area, the overall visual character of the City's Downtown would be improved with implementation of the proposed project. Although new development proposed within the Downtown area would be at slightly greater heights than existing development, these buildings would generally be consistent with the overall urban character and height profile of the City's Downtown. Moreover, future projects occurring within the Downtown PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 13: View from East Shoreline Drive: Key View 13 (Figure 4.1.3-13) shows a view looking southeast from East Shoreline Drive in Downtown Long Beach. The vantage point shows the Marina Green Park with expansive views of the Pacific Ocean in the distance. This vantage point was chosen because it represents an aesthetic resource within the Open Space (OS) PlaceType and does not represent a Major Area of Change. Although no rendering is provided for Key View 13, post-project conditions would be similar to the Existing Conditions view.

As stated previously, the visual character of this neighborhood is currently defined by recreational uses, open space, and views of the Pacific Ocean. This view is representative of other ocean views from this area.

The Pacific Ocean is considered the City's most prominent scenic resource. The Open Space PlaceType has distinctive scenic, natural, or cultural features that contribute to community character and would preserve visual quality throughout the City, such as views of the Pacific Ocean. Implementation of the proposed project would result in the restoration and protection of the City's natural features, which include the Pacific Ocean, beaches, and bluffs (Strategy No. 29). In addition, the LUE specifies protection and enhancement of aesthetic resources, such as the Pacific Ocean, through the preservation of open space. In some instances, the proposed LUE would permit the construction of commercial recreation uses in the Open Space PlaceType. The maximum building heights in this PlaceType area would be limited to approximately two stories, which would allow for the preservation of existing scenic views of the Pacific Ocean. Further, buildings constructed at the maximum height allowed under the proposed LUE would be situated in a manner that is consistent with the open space function and character of the area. Future development as part of the project would provide greater access to the open space network (Strategy No. 30) through improvements to existing facilities and wayfinding programs (Policy UD 30-1). Therefore, the proposed project would maintain public views of the open space areas, including the Pacific Ocean. Moreover, future projects occurring within the Open Space PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Impacts to the visual character and quality of this Open Space area would be less than significant, and no mitigation would be required.

Midshore

Key View 14: View of 1911-1990 East 7th Street: Key View 14 (Figure 4.1.3-14) shows a view looking northeast from East 7th Street and Cherry Street in the Midshore neighborhood. This vantage point was chosen because it represents the Neighborhood-Serving Community - Moderate (NSC-M) PlaceType. This vantage point represents a Major Area of Change (Promote Infill and Redevelopment to Support Transit).

As stated previously, existing uses within this area include low-intensity commercial uses and medium-density residential uses. This view can be considered representative of other low- and medium-intensity neighborhood-serving areas that are targeted for infill development throughout the City.

Implementation of the proposed project would promote infill development to support transit nodes. Following project implementation, new development envisioned within this area would include mixed-use development allowed under the Neighborhood-Serving Community PlaceType. The PlaceType is composed of mid-rise, medium-intensity mixed-use commercial centers and corridors designed to meet the need for goods and services close to residential areas. The PlaceType would allow for maximum building heights of seven stories; however, the area depicted in Key View 14 allows a maximum building height of five stores. As such, new development envisioned under this PlaceType would be taller than the building heights of the existing structures. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary

street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). In order to ensure the orderly transition between new mixed-use development envisioned under the proposed project and existing low-density neighborhoods, future projects would be required to protect and enhance established neighborhoods (Strategy No. 21). Specifically, new higher intensity development would be adjacent to transit stations and would step down in height and scale when adjacent to existing housing or lower scale buildings (Policy UD 21-1). This gradual increase of building heights would enable continuity in form and a pattern of building articulation. Further, the visual quality of this area would be enhanced by streetscape improvements (Policy UD 21-3) and the gateway elements that help define neighborhood edges and provide transitions into center development along lengthy corridors (Policy UD 21-2). The overall visual quality within this Area of Change would be improved through the streetscape and landscape features described above. Moreover, future projects occurring within the NSC PlaceTypes would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. As stated previously, aesthetic impacts would not be considered significant environmental impacts under CEQA for future infill projects within transit priority areas involving residential, mixed-use residential, or employment centers. Therefore, overall impacts to the visual character and quality of areas targeted for infill development to support transit uses would be less than significant, and no mitigation would be required.

Key View 15: View from East 1st Street: Key View 15 (Figure 4.1.3-15) shows a view looking east from East 1st Street in the Midshore neighborhood. This vantage point was chosen because it represents an historic district in a Founding and Contemporary Neighborhood. This vantage point does not represent a Major Area of Change. Although no rendering is provided for Key View 15, post-project conditions would be similar to the Existing Conditions view.

As stated previously, the visual character of this neighborhood is currently defined by low-density residential uses. This view is representative of other historic districts in the City.

Following project implementation, new development envisioned within the FCN PlaceType would include low-density residential uses at a maximum building height of two stories. As such, the nature and scale of the proposed uses under the Founding and Contemporary Neighborhoods PlaceType would be similar to existing uses within established residential neighborhoods located throughout the City. Future development proposed within historic districts would protect and enhance existing historic resources (Strategy No. 9). Historic buildings that enhance a historic district would be preserved (Policy UD 9-1), and districts that are part of the City's history and possess a unique neighborhood character would be protected (Policy UD 9-2). Further, future development within the FCN PlaceType would aim to protect and enhance established FCN PlaceTypes (Strategy No. 19) and would include features that would promote the uniqueness of each neighborhood t (e.g., preservation of trees, historic structures, architectural details, and cultural amenities [Policy

UD 19-4]). New development would be designed to respect the height, massing, and open space characteristics of the existing neighborhood (Policy UD 19-3). The project would also require that new projects within this PlaceType 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 (Policy UD 19-5). With implementation of these features, the overall visual quality of the viewshed would be improved and protected with implementation of the proposed project. Although this area does not represent a Major Area of Change, areas identified as historic districts and Founding and Contemporary Neighborhoods would be protected and enhanced under the proposed project. These areas would be improved through the design, streetscape, and landscape features described above. Moreover, future projects occurring within the FCN PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, overall impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 16: View from Ocean Boulevard: Key View 16 (Figure 4.1.3-16) shows a view looking southwest from Ocean Boulevard in the Midshore neighborhood. The key view is located within the Open Space (OS) PlaceType. This vantage point was chosen because it represents an aesthetic resource and is not within a Major Area of Change. Although no rendering is provided for Key View 16, post-project conditions would be similar to the Existing Conditions view.

As stated previously, the visual character of this neighborhood is currently defined by recreational uses, open space, and views of the Pacific Ocean. This view is representative of other ocean views from this area.

The Open Space PlaceType has distinctive scenic, natural, or cultural features that contribute to community character and would preserve visual quality throughout the City, such as views of the Pacific Ocean. Thus, preservation of this Open Space area would preserve views of the Pacific Ocean, which is the City's most prominent scenic resource. Implementation of the proposed project would result in the restoration and protection of the City's natural features, which include the Pacific Ocean, beaches, and bluffs (Strategy No. 29). In some cases, the proposed LUE would permit the construction of commercial recreation uses in the Open Space PlaceType. The maximum building heights in this PlaceType area would be limited to approximately two stories, which would allow for the preservation of existing scenic views of the Pacific Ocean. Further, buildings constructed at the maximum height allowed under the proposed LUE would be situated in a manner that is consistent with the open space function and character of the area. Future development as part of the project would provide greater access to the open space network (Strategy No. 30) through improvements to existing facilities and wayfinding programs (Policy UD 30-1). Therefore, the proposed project would maintain public views of the open space areas, including the Los Cerritos Channel and SEASP areas. Moreover, future projects occurring within the Open Space PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict

with regulations governing the scenic quality of future development in the planning area. Impacts to the visual character and quality of this open space area would be less than significant, and no mitigation would be required.

Southeast

Key View 17: View of 3980 Ocean Boulevard: Key View 17 (Figure 4.1.3-17) shows a view looking southwest from Ocean Boulevard and Termino Avenue in Southeast Long Beach. This vantage point was chosen because it represents the Waterfront (WF) PlaceType. This vantage point represents a Major Area of Change (Redevelop to Highest and Best Use).

As stated previously, the visual character of this neighborhood is currently defined by commercial uses of varying intensities and medium-density residential uses. This view can be considered representative of other mixed-use development in the Waterfront area.

Implementation of the proposed project would continue the development pattern currently implemented in the Waterfront PlaceType. Building heights in the area depicted in the key view would be limited to four stories. However, maximum building heights established in this PlaceType under the LUE would be approximately 600 ft, which is significantly taller than the height of existing buildings in various portions of the Waterfront PlaceType. Although new development proposed within the Waterfront PlaceType would be at greater heights than existing development, these buildings would generally be consistent with the overall urban character of the City's development. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). Future development as part of the proposed project would encourage mixed uses and greater building intensity to be located nearest the center of development, with housing and/or lower-scale buildings on the periphery (Policy UD 28-2). In addition, views of future development in this area would be enhanced by attractive gateway elements (Policy UD 28-4), street design characteristics unique to each Waterfront PlaceType (Policy UD 28-5), and pedestrian-scaled building details (Policy UD 28-10), which would encourage the establishment of new uses on blighted or underutilized parcels to promote the revitalization of the Waterfront PlaceType. The proposed project would aim to improve the visual quality of this area through the provision of pedestrian amenities and streetscape improvements. Moreover, future projects occurring within the Waterfront PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 18: View from East Ocean Boulevard: Key View 18 (Figure 4.1.3-18) shows a view looking southeast from East Ocean Boulevard in Southeast Long Beach. The key view is located within the

Waterfront (WF) PlaceType. This vantage point was chosen because it represents an aesthetic resource and is not within a Major Area of Change. Although no rendering is provided for Key View 18, post-project conditions would be similar to the Existing Conditions view.

As stated previously, the visual character of this neighborhood is currently defined by recreational uses, open space, and views of the Pacific Ocean. This view is representative of other ocean views from this Waterfront area.

Implementation of the proposed project would continue the development pattern currently implemented in the Waterfront PlaceType. Building heights in the area depicted in the key view would be limited to four stories. However, maximum building heights established in this PlaceType under the LUE would be approximately 600 ft, which is significantly taller than the height of existing buildings in various portions of the Waterfront PlaceType. Although new development proposed within the Waterfront PlaceType would be at greater heights than existing development, these buildings would generally be consistent with the overall urban character of the City's development. Future development proposals are unknown, and therefore, the anticipated General Plan build out cannot be projected; however, future design patterns would properly scale a building's height and massing to the primary street it fronts (Policy UD 14-1). For example, taller buildings would be located on larger boulevards, and smaller buildings would be located on narrower streets. New development in high-density centers and corridors would be required to transition in height, massing, scale, and intensity to provide a buffer to lower density residential development (Policy UD 14-2). Future development as part of the proposed project would encourage mixed uses and greater building intensity to be located nearest the center of development, with housing and/or lower-scale buildings on the periphery (Policy UD 28-2). In addition, views of future development in this area would be enhanced by attractive gateway elements (Policy UD 28-4), street design characteristics unique to each Waterfront PlaceType (Policy UD 28-5), and pedestrian-scaled building details (Policy UD 28-10), which would encourage the establishment of new uses on blighted or underutilized parcels to promote the revitalization of the Waterfront PlaceType. The proposed project would aim to improve the visual quality of this area through the provision of pedestrian amenities and streetscape improvements. Moreover, future projects occurring within the Waterfront PlaceType would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Therefore, impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Key View 19: View from Studebaker Road: Key View 19 (Figure 4.1.3-19) shows a view looking southwest from Studebaker Road in Southeast Long Beach. This view is intended to display the Los Cerritos Channel and associated open space areas in the SEASP area. This vantage point was chosen because it represents a Major Area of Change (More Open Space). Although no rendering is provided for Key View 19, post-project conditions would be similar to the Existing Conditions view.

As stated previously, the visual character of this neighborhood is currently defined by open space. This view can be considered representative of other Major Areas of Change (More Open Space) throughout the City.

Implementation of the proposed project would encourage the restoration and preservation of open space in this area; however, in some cases the proposed LUE would permit the construction of commercial recreation uses in the Open Space PlaceType. The maximum building heights in this PlaceType area would be limited to approximately two stories, which would allow for the preservation of existing scenic views of the Los Cerritos Channel and associated open space areas. Further, buildings constructed at the maximum height allowed under the proposed LUE would be situated in a manner that is consistent with the open space function and character of the area. Future development as part of the project would provide greater access to the open space network (Strategy No. 30) through improvements to existing facilities and wayfinding programs (Policy UD 30-1). The Open Space PlaceType has distinctive scenic, natural, or cultural features that contribute to community character, and therefore, would preserve visual quality throughout the City. Therefore, the proposed project would maintain public views of the open space areas, including the Los Cerritos Channel and SEASP areas. Moreover, future projects occurring within the Open Space PlaceType and PlaceTypes in the SEASP area would also be required to comply with all applicable Goals, Policies, and Implementation Strategies outlined in the proposed LUE and UDE, as well as development regulations outlined in the City's Municipal Code. Compliance with the City's General Plan and Zoning Code would ensure that future projects would not conflict with regulations governing the scenic quality of future development in the planning area. Impacts to the visual character and quality of this Major Area of Change would be less than significant, and no mitigation would be required.

Summary. The Key Views provided above are illustrative of typical development that is projected to occur upon project implementation. Although future development would occur at higher and lower intensities than development shown in the post-project conditions of Key Views 1 through 19, future development proposals are unknown at this time, and therefore, the anticipated General Plan build out cannot be projected. The full anticipated General Plan build out is highly unlikely.

New development facilitated by project approval would primarily occur within the proposed Major Areas of Change, which encompass approximately 13 percent of the total land area in the City. While growth would occur in areas outside of the Major Areas of Change, it is not expected that growth in these areas would result in significant changes in intensity or density over existing conditions. Furthermore, the visual character and quality of the planning area would be preserved and enhanced through the application of goals, policies, strategies, and development standards outlined in the LUE and UDE that are intended to guide the quality and aesthetic value of existing and future development in the City. Future projects within the City would also be required to submit detailed plans to the City to ensure consistency with the City's design requirements (including those outlined in the proposed UDE) aimed at improving the visual character of the planning area. For example, future planning applications would be evaluated for compatibility between the proposed project and existing neighborhoods, including the appropriate buffers to minimize impacts associated with shade/shadow on adjacent uses. As such, project implementation would ensure that the majority of the planning area, including identified aesthetic resources and scenic vistas, would not be affected by future growth. Therefore, the proposed project would not substantially degrade the visual character of the planning area nor conflict with applicable zoning and other regulations governing scenic quality, and no mitigation would be required.

Threshold 4.1.4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact. As stated previously, existing sources of light in the project vicinity include headlights on nearby roadways; building facade and interior lighting; pole-mounted lighting in the parking areas; and lighting associated with regional serving uses such as the Port of Long Beach, the Long Beach Airport, and entertainment activities at the Pike at Rainbow Harbor. Adjacent residential areas, public facility uses (including roadways and highways), commercial uses, and industrial uses also currently emit light and glare. Lighting from existing distant development within the region and surrounding cities also contributes to the background lighting within the City.

New development envisioned under the proposed project would cause light and glare impacts if it would result in the introduction of highly reflective building materials that create glare or do not conform to applicable regulations related to glare. Reflective materials, such as large expanses of glass, are typically used in office and commercial uses that include large windows.

Future development facilitated by the proposed project would introduce new sources of light to the City that are typical of development projects. Lighting proposed as part of future projects would vary by development type. Areas with low-density residential uses are anticipated to have a very minimal effect on nighttime lighting because these uses would be limited to security or ornamental lighting on residential uses and supporting structures. Conversely, the largest nighttime lighting would occur in areas proposed for commercial, industrial, or high-density mixed-uses (e.g., high-rise buildings in the Downtown area) because such uses contain lighted signs, nighttime security lighting, and are often located with multifamily residential uses that have their own lighting requirements.

Future development facilitated by project approval would be required to comply with the design standards established in the proposed UDE and the City's Municipal Code. For example, all parking area and structure lighting would be designed with lights directed and shielded to prevent light and glare from intruding onto adjacent sites (Long Beach Municipal Code, Section 21.41.259, Parking areas—Lighting). On-site landscaping proposed as part of new development projects would further reduce glare and would serve to screen light sources to reduce the visual impact of lighting from buildings and parking lots. The City would review site plans and architectural renderings for new projects with an emphasis on the presence of reflective materials and proposed lighting to minimize potential impacts related to light and glare, and propose mitigation, if necessary. Potential mitigation measures could require the project applicant to prepare a lighting plan, a photometric study for review and approval, or undergo a lighting inspection. These measures are intended to minimize the impacts of new sources of light and glare on adjacent land uses, limit lighting to that necessary for security, and ensure that lighting is shielded to reduce glare and spill lighting effects to residential areas.

Although future development would introduce new sources of light that would contribute to the light visible in the night sky and surrounding area, the planning area is located within a highly urbanized area that is currently characterized by significant nighttime lighting. Therefore, the proposed project's impact related to light and glare would be less than significant, and no mitigation would be required.

4.1.9 Mitigation Measures

The proposed project would not result in any significant adverse impacts related to aesthetics, and no mitigation would be required.

4.1.10 Cumulative Impacts

As defined in the *State CEQA Guidelines,* cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for aesthetics. The project proposes an update to the City's General Plan that would affect development patterns throughout the City. As such, because the proposed project is a citywide policy action that would facilitate future development throughout the entire City, the proposed project itself is cumulative in nature.

Cumulative visual impacts would occur if the visual character of the planning area or the immediately adjacent areas would be degraded by the proposed project in combination with other past, present, or reasonably foreseeable projects, thereby having a substantial negative effect on the surrounding aesthetics, including visual character, views, and light/glare and shade/shadow conditions. The cumulative study area for visual resources for the proposed project is the City's viewshed. The viewshed from the planning area includes vantage points with views of the Pacific Ocean, the Port of Long Beach, Long Beach marinas, the San Gabriel Mountains, and the Santa Ana Mountains.

As described previously, future development facilitated by the proposed project would change the visual character of the planning area, specifically within the Major Areas of Change, as compared to existing conditions. While the existing character of the planning area would be substantially changed compared to existing conditions, the site design, landscaping, and architectural design of future projects would be required to be consistent with goals, policies, strategies, and development standards established by the proposed UDE, which are intended to avoid, reduce, offset, or otherwise minimized identified potential adverse impacts of the proposed project or provide significant benefits to the community and/or to the physical environment. Future projects would also be required to go through the environmental, architectural, and site plan review and approval process. Furthermore, development envisioned by the proposed project within the PlaceTypes is intended to improve the overall visual character of the City through new development projects that would shape the urban environment of the City, while preserving existing development that define its unique aesthetic character. Therefore, future projects envisioned by the proposed project would result in cumulatively less than significant impacts related to the degradation of the overall visual character of the City.

The proposed project would introduce new sources of light and glare on the planning area as a result of future development projects facilitated by project approval. As previously stated, uses permitted under the proposed PlaceTypes would introduce more lighting due to the higher building densities as allowed by the proposed project. However, because the City is currently characterized as an urban environment with existing high levels of light pollution, light emitted by future development projects would not result in a cumulatively significant visual impact related to light and glare.

4.1.11 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts related to aesthetics, and no mitigation would be required.

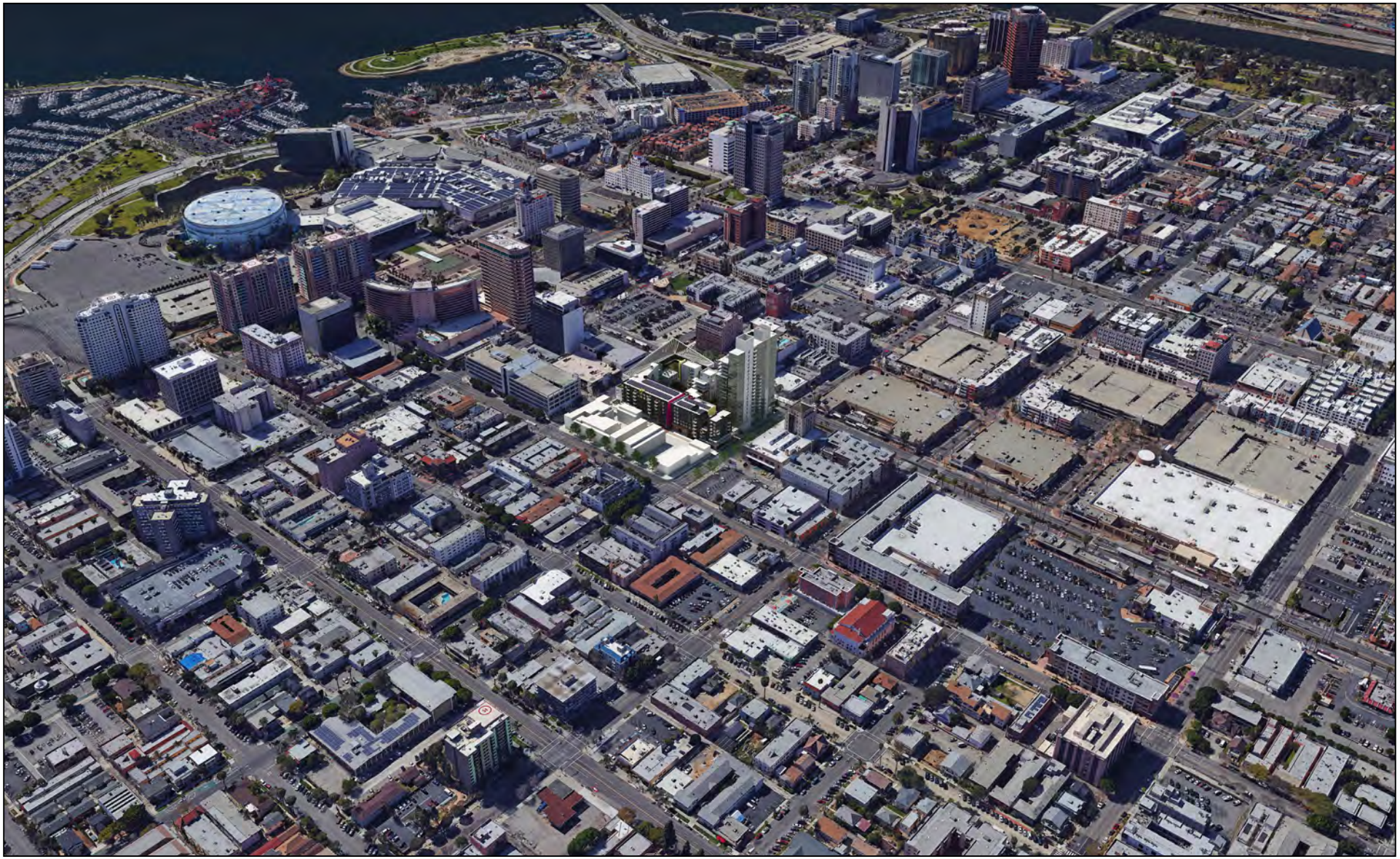

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FIGURE 4.1.1

General Plan Land Use and Urban Design Elements

Downtown Aerial View

SOURCE: City of Long Beach

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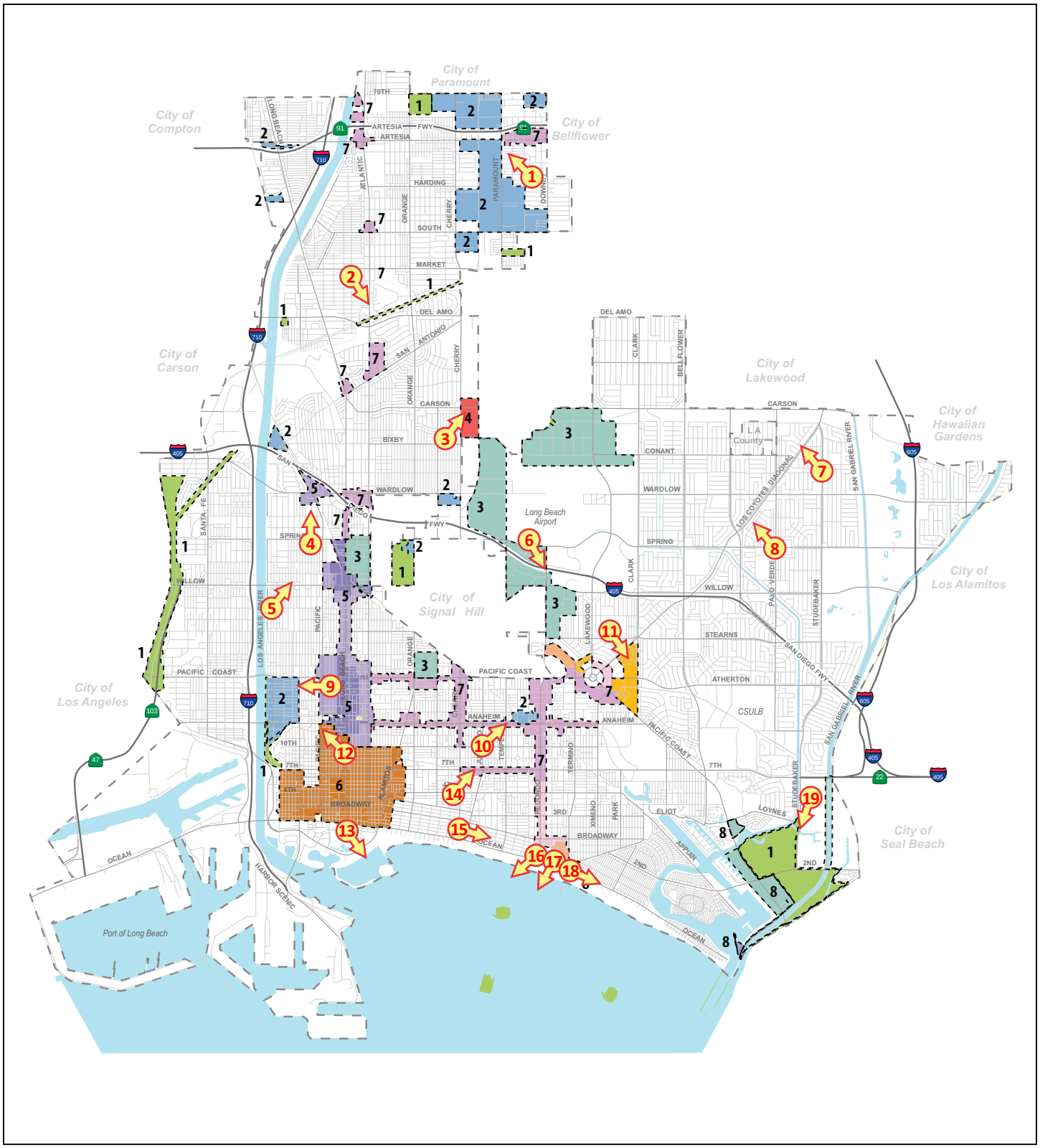

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FIGURE 4.1.2

LEGEND

- Key View Location

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SOURCE: Land Use Element, City of Long Beach

General Plan Land Use and Urban Design Elements

Key View Locations

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FIGURE 4.1.3-1

General Plan Land Use and Urban Design Elements

Key View 1: View of 2400 East Artesia Boulevard

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Project Rendering

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FIGURE 4.1.3-2

General Plan Land Use and Urban Design Elements

Key View 2: View of 5368 Atlantic Avenue

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FIGURE 4.1.3-3

General Plan Land Use and Urban Design Elements

Key View 3: View of 3910 Cherry Avenue

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Project Rendering

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FIGURE 4.1.3-4

General Plan Land Use and Urban Design Elements

Key View 4: View of the 3100 Block of Cedar Avenue

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FIGURE 4.1.3-5

General Plan Land Use and Urban Design Elements

Key View 5: View of 701 West Willow Street

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Existing Condition

Project Rendering

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FIGURE 4.1.3-6

General Plan Land Use and Urban Design Elements

Key View 6: View of 3490 Spring Street

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FIGURE 4.1.3-7

General Plan Land Use and Urban Design Elements

Key View 7: View of 3455 North Studebaker Road

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FIGURE 4.1.3-8

General Plan Land Use and Urban Design Elements

Key View 8: View of 6235 East Spring Street

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FIGURE 4.1.3-9

General Plan Land Use and Urban Design Elements

Key View 9: View of 1750 Pacific Avenue

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Project Rendering

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FIGURE 4.1.3-10

General Plan Land Use and Urban Design Elements

Key View 10: View of 1006 Junipero Avenue

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Project Rendering

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FIGURE 4.1.3-11

General Plan Land Use and Urban Design Elements

Key View 11: View of 4874 East Los Coyotes Diagonal

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Project Rendering

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FIGURE 4.1.3-12

General Plan Land Use and Urban Design Elements

Key View 12: View of 1056 Pacific Avenue

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FIGURE 4.1.3-13

General Plan Land Use and Urban Design Elements

Key View 13: View from East Shoreline Drive

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Project Rendering

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FIGURE 4.1.3-14

General Plan Land Use and Urban Design Elements

Key View 14: View of 1911-1990 East 7th Street

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FIGURE 4.1.3-15

General Plan Land Use and Urban Design Elements

Key View 15: View from East 1st Street

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FIGURE 4.1.3-16

General Plan Land Use and Urban Design Elements

Key View 16: View from Ocean Boulevard

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Project Rendering

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FIGURE 4.1.3-17

General Plan Land Use and Urban Design Elements

Key View 17: View of 3980 Ocean Boulevard

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Existing Condition

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FIGURE 4.1.3-18

General Plan Land Use and Urban Design Elements

Key View 18: View from East Ocean Boulevard

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Existing Condition

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FIGURE 4.1.3-19

General Plan Land Use and Urban Design Elements

Key View 19: View from Studebaker Road

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4.2 AIR QUALITY

4.2.1 Introduction

This section evaluates the potential air quality impacts associated with the construction and operation of potential development that would be allowed under the proposed General Plan Land Use Element and Urban Design Elements Project (proposed project). This analysis evaluates potential project-specific air quality effects by identifying potential air quality impacts that may occur within the planning area by assessing the effectiveness of mitigation measures incorporated as part of the design of the proposed project. This section is based on information provided in the Air Quality Element (1996) of the City of Long Beach's (City) General Plan, and the Air Quality Impact Analysis (LSA 2019) prepared for the proposed project (Appendix B).

4.2.2 CEQA Baseline

Although the Notice of Preparation (NOP) was published in May 2015, the baseline for air quality is 2018, the year when the analysis for the Recirculated Draft Environmental Impact Report (EIR) was initiated. This provides an updated baseline that reflects current conditions related to air quality at the time the Recirculated Draft EIR was prepared.

4.2.3 Methodology

A number of modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the South Coast Air Quality Management District (SCAQMD), have created guidelines and requirements to conduct air quality analysis. SCAQMD's current guidelines, the *CEQA Air Quality Handbook,* 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 the California Emissions Estimator Model (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 development projects.

This section includes estimated emissions associated with implementation of the project. During construction, fugitive dust emissions are released during activities that disturb the soil, such as grading and excavation, and building demolition and construction. Additionally, emissions are released during is the application of architectural coating and off-gas emissions are associated with asphalt paving. Construction emissions associated with project implementation were calculated using CalEEMod. Criteria pollutants with regional impacts would be emitted by increased vehicle trips, as well as by emissions associated with 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 and detailed methodology assumptions are included in Section 4.2.4.8 below. Calculation details are provided in Appendix B.

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 SCAQMD Air Quality Management Plan (AQMP) in order to comply with the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS).

4.2.4 Existing Environmental Setting

4.2.4.1 Existing Project Site

The project's planning area includes the entire City as it is an update to the City's General Plan and is intended to guide growth and future development through the horizon year 2040. The project proposes to update the City's current Land Use Element (LUE) (1989) and adopt an entirely new Urban Design Element (UDE) into its General Plan. Through implementation of the LUE, the City is looking to target future growth in specific transit-rich corridors and districts in order to increase housing and job density in commercial and industrial areas, improve the corridors, and maintain and improve the existing established neighborhoods. The LUE will replace existing land use designations with "PlaceTypes" that are more flexible and comprehensive, and will lead to a subsequent comprehensive Zoning Code update. Major land use changes proposed as part of the LUE are identified as "Major Areas of Change," and are illustrated in previously referenced Figure 3.3, in Chapter 3.0, Project Description.

As previously identified, the City is also proposing to adopt a new UDE as part of its General Plan to replace its existing Scenic Routes Element (SRE). The UDE would work towards shaping the continued evolution of the urban environment in Long Beach, while also allowing for a balance between the existing natural environment and new development. The UDE is interconnected with the LUE and will provide minimum design standards for the "PlaceTypes" and their respective component development types and patterns.

The planning area is currently developed and consists 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.

4.2.4.2 Sensitive Uses in the Project Vicinity

Sensitive receptors in the City include residences, retirement facilities, hospitals, schools, recreational land uses, and similar uses that are sensitive to air pollutants. Construction and operation of development allowed under the LUE could adversely affect nearby air quality-sensitive land uses.

4.2.4.3 Climate and Meteorology

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 South Coast Air Basin (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 degrees Fahrenheit (°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 carbon monoxide (CO) and nitrogen oxides (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.

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1 Western Regional Climate Center, 2015. Website: https://wrcc.dri.edu/.
2 Western Regional Climate Center, 2015. Website: https://wrcc.dri.edu/.
3 Ibid.

4.2.4.4 Regional Air Quality

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants:[4] 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 quality 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 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.

4.2.4.5 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 United States Environmental Protection Agency (USEPA) and the California Air Resources Board (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, CARB identified particulate matter from diesel-fueled engines as a TAC. CARB has

[4] 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.

completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[5] 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.

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 one million) that is greater than all other measured TACs combined.[6] 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. CARB anticipates that by 2020, average statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of CARB's Diesel Risk Reduction Plan,[7] meaning that the statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in one million to 21.5 cancer cases in one million.

Table 4.2.A summarizes the sources and health effects of air pollutants discussed in this section. Table 4.2.B presents a summary of state and federal ambient air quality standards (AAQS).

4.2.4.6 Attainment Status

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 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 California Clean Air Act (CCAA) divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

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5 California Air Resources Board (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.

6 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.

7 Ibid.

Table 4.2.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).

Table 4.2.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 (O_3)[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 (PM_{10})[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 ($PM_{2.5}$)[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 (NO_2)[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 (SO_2)[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			

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

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 3 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 µg/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 3 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 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 $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/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] 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 µg/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, 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.

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

The USEPA designates areas for O_3, CO, and NO_2 as one of the following: 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 4.2.C provides a summary of the attainment status for the Basin with respect to NAAQS and CAAQS.

Table 4.2.C: 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).
[1] Except in Los Angeles County.
CO = carbon monoxide
N/A = not applicable
NO_2 = 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

4.2.4.7 Local Air Quality

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 CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring 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 years 2015 to 2017 at the 2425 Webster Street ambient air quality monitoring station in Long Beach, shown in Table 4.2.D, 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 ten 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.

Table 4.2.D: 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

Sources: CARB (2018) and USEPA (2018).
[1] Data taken from the 3648 Long Beach Boulevard monitoring site.
µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
ND = No data. There was insufficient (or no) data to determine the value.
ppm = parts per million
USEPA = United States Environmental Protection Agency

4.2.4.8 Existing City of Long Beach Criteria Pollutant Emissions Inventory

Table 4.2.E 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.

Table 4.2.E: 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).

[1] EMFAC2017 based on daily vehicle miles traveled (VMT) provided by LSA.

[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.

CalEEMOD = California Emissions Estimator Model
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

The criteria air pollutant emissions inventory includes the following sectors:

- **Transportation:** Based on the Traffic Impact Analysis (TIA), the existing 2018 citywide vehicle miles traveled (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.
    - 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 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 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.

- **Energy and Area Source Emissions:** Non-hearth natural gas use and building electricity for residential and nonresidential land uses in the City. 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.[8] 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.

[8] 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.

4.2.5 Regulatory Setting

The USEPA and 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.

4.2.5.1 Federal Regulations

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.

4.2.5.2 State Regulations

California Clean Air Act. In 1988, the California Clean Air Act (CCAA) required that all air quality 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.

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 that 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. CARB has developed an Air Quality and Land Use Handbook[9] (the CARB Handbook), 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

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

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.

4.2.5.3 Local and Regional Policies and Regulations

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 (Federal) Clean Air Act (CAA) and the California Clean Air Act (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. These prohibitions will apply to future development facilitated by approval of the proposed project.
    - **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 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. Future development facilitated by approval of the project will comply with Rule 1113.

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 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 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.[10]

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 Regional Transportation Plan (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.

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

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

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 Regional Transportation Plan/Sustainable Communities Strategy (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 greenhouse gas (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 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 State Implementation Plan (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 California Environmental Quality Act (CEQA) review.

City of Long Beach General Plan Air Quality Element. The adopted City of Long Beach General Plan addresses air quality in the Air Quality Element[11] and contains goals and policies and actions in relation to government organization roles and responsibilities, ground transportation, air transportation, land use, particulate emissions, energy conservation, and education. The following goals and policies related to air quality are presented in the Air Quality Element:

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.

[11] City of Long Beach. 1996. *Long Beach General Plan*. December.

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[12] of the City of Long Beach General Plan aims at creating a safe, efficient, balanced and multimodal mobility network, maintaining and enhancing air, ground, and water transportation capacity, and leading the region by example with innovative and experimental practices, and includes goals, policies, and actions that help reduce air pollutants and GHG emissions through more efficient transportation. The following goals, strategies, and policies related to air quality are presented in the Mobility Element:

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.

Policy 1-9: Increase mode shift of transit, pedestrians, and bicycles.

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

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.

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.

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.

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.

Policy 5-2: Reduce vehicle miles traveled (VMT) and vehicle trips through the use of alternative modes of transportation and Transportation Demand Management.

Policy 5-3: Encourage the use of low- or no-emission vehicles to reduce pollution.

Policy 5-4: Promote car-sharing and Neighborhood Electric Vehicle ownership as an important means to reduce traffic congestion.

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.

Policy 6-3: Where appropriate, encourage the conversion of on-street parking space for expanded sidewalk widths or landscaping.

Policy 6-7: Support using parking supply and pricing as a strategy to encourage use of non-automobile modes where feasible.

Policy 6-8: Where applicable, encourage users to park once to meet all of their travel needs within the City.

Policy 6-11: Encourage the use of transit, carpooling, and walking to reduce the need for parking.

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.

Policy 6-13: Consider reducing parking requirements for mixed-use developments, for developments providing shared parking or a comprehensive Transportation Demand Management Program, or developments located near major transit hubs.

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.

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.

Policy 14-1: Provide for the efficient, clean, and safe movement of goods to support commerce and industry.

Policy 14-2: Adopt and enforce truck routes to minimize the impacts of truck emissions on the community.

Policy 14-3: Reduce congestion on freeways and designated truck routes.

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.[13] 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

4.2.6 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact with respect to air quality if it would:

Threshold 4.2.1: Conflict with or obstruct implementation of the applicable air quality plan;

Threshold 4.2.2: 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;

Threshold 4.2.3: Expose sensitive receptors to substantial pollutant concentrations; or

Threshold 4.2.4: 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.

[13] City of Long Beach. 2010. *Sustainable City Action Plan*. February.

4.2.7 Compliance Measures and Project Design Features

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 CM 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 volatile organic compounds (VOCs), nitrogen oxides (NO_X), 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.

4.2.7.1 Proposed Land Use Element Strategies and Policies

The following proposed Goals, Strategies, and Policies are applicable to the analysis of air quality and would replace existing goals, strategies, and policies outlined in the City's existing LUE and SRE following project approval:

Land Use Element.

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.

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 *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 PlaceType 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.

4.2.8 Project Impacts

Threshold 4.2.1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Significant and Unavoidable Impact.

The proposed project site is located within the Basin and is within the jurisdiction of the SCAQMD. Basin-wide air pollution levels are monitored by the SCAQMD through the AQMP. The current regional AQMP is the 2016 AQMP, approved by the SCAQMD on March 3, 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 (Federal Clean Air Act [FCAA] Section 182(e)(5) measures)

The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use

plans and/or population projections. The AQMP uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the AQMP is based on local land use plans, projects that are deemed consistent with local land use plans are found to be consistent with the AQMP.

CEQA requires that general plans be evaluated for consistency with the AQMP. 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 the anticipated build out of the City and therefore, emissions of criteria pollutants associated with future development allowed for 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 allowed 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.

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 VMT per day in the existing condition to 9,028,327 VMT 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 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 VMT per day, which is anticipated to decline in the future to 49.9 VMT per day in 2040 without the LUE. The efficiency of the distribution of land uses in the LUE 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 LUE/UDE, VMT per capita in Long Beach remains lower than the region as a whole and lower than in 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 4.2.H), 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. Growth expected under the proposed project 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 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 attainment of the AAQS or emission reductions in the AQMP. The General Plan 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 (as shown in Figure 2 of the Air Quality Impact Analysis for this project) 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 project 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.

Threshold 4.2.2: Would the project 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?

Construction Emission Impacts: Significant and Unavoidable Impact.

It is important to note that the proposed project is a regulatory document that establishes the framework for growth and development but 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 below under *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 the CalEEMod, version 2016.3.2, and EMFAC2017 (for vehicle emissions) and are summarized in Table 4.2.F. 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 4.2.F.

Table 4.2.F: 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).
CO = carbon monoxide
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 = oxides of sulfur
VOC = volatile organic compounds

As shown in Table 4.2.F, 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 potentially be significant, and mitigation would be required.

The proposed LUE/UDE includes goals regarding land use development and identifies policies designed to reduce emissions of criteria pollutants. 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 (MM) 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.

Operational Impacts: Significant and Unavoidable Impact.

As previously stated, 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 LUE 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 below.

City of Long Beach Emissions Inventory: Table 4.2.G 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 4.2.H provides a summary of the emissions and a comparison of the various scenarios to the SCAQMD thresholds in order to determine significance. 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 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 Buildout Year 2040.** This scenario evaluated the anticipated buildout of the proposed project, including 2040 with project VMT data, and reflects the increase in housing units anticipated under the plan.

Table 4.2.G: 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 + Industrial[2]	30	163	137	1	10	10
Energy: Public Facilities/Institutional[2]	7	68	57	0	5	5
Area Source: Residential[3]	5,135	2,524	13,085	13	224	224
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 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 (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

Table 4.2.H: 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

The analysis findings indicate that implementation of the proposed project would result in an overall decrease in criteria air pollutant emissions with the project as compared to existing conditions (year 2018). This decrease is primarily attributed to the change in vehicle emissions between existing conditions and future land uses development associated with the anticipated General Plan buildout scenario (year 2040). VMT is expected to decrease substantially by the year 2040, and at the same time, vehicle emissions per mile would also decrease.

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).

As identified in Table 4.2.H, 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.

Implementation of the proposed LUE policies would help to reduce air pollutant emissions, as many of the policies included in the plan promote an increase in concepts and designs that would increase walking, bicycling, and use of public transit that would contribute to reduced VMT (e.g., Policies AQ 2.1.1, 2.1.2, 2.3.1, and 2.4.1). In addition, Policy 2.6.2 of the Air Quality Element encourages the installation of alternative fueling facilities such as electric chargers for vehicles. Furthermore, Policy Mobility of People (MOP) 5-2 of the Mobility Element calls for the continued active enforcement of the City's trip reduction through the use of alternative modes of transportation and Transportation Demand Management. As listed in Section 4.2.7.1 above, the proposed LUE also includes the following Strategies and Policies that would result in a reduction in air emissions: Strategy No. 1, LU Policies 1-1 through 1-7; and Strategy No. 11, LU Policies 11-2 and 11-5.

As shown in Table 4.2.H, the change in emissions for Year 2040 with Proposed Project conditions would decrease from Existing Year 2018. Therefore, despite the additional population and employment growth in the City, citywide emissions would decrease and would not exceed the SCAQMD thresholds. Therefore, regional dispersion modeling would not be warranted. The decrease in emissions is primarily associated with the decrease in emissions associated with mobile source emissions, which would decrease due to vehicle emission standards. It should also be noted that overall VMT in the future will decrease when compared to existing conditions. An analysis of 2018 VMT and demographic data was evaluated using 2040 emission factors. Results of the analysis outlined in Table 4.2.H show the difference in emissions from the 2040 with Proposed Project conditions to the Existing 2018 with 2040 Emission Factors conditions. Results of the analysis indicate that emissions of criteria pollutants associated with future development under the LUE/UDE would result in a cumulatively considerable significant impact associated with emissions of VOCs and CO as shown in this table. Emissions of SO_x, NO_x, $PM_{10,}$ and $PM_{2.5}$ would be below the SCAQMD regional significance threshold and would not be significant.

As shown in Table 4.2.H, 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 be 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, MM 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 MM 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.

Future development under the proposed project would also be required to demonstrate compliance with the AQMP, the SIP, 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. Because implementation of the proposed project would result in an increase in overall criteria air pollutant emissions from Existing 2018 conditions (assuming 2040 Emission Factors), even with implementation of mitigation, the operational air quality impacts associated with the proposed project would be significant.

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, in order to disclose a worst-case scenario, the Air Quality Impact Analysis (LSA 2019) included an analysis of average construction emissions along with the horizon year 2040 project emissions (see Table L in Appendix B). It was determined that combined emissions would be below the significance threshold established by the SCAQMD for daily project emissions.

CO Hot Spots: Less than Significant Impact.

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.[14] 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)[15] is located approximately 4 miles north of the proposed project. Since the SCAQMD modeled intersections, including this intersection, 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 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.

Threshold 4.2.3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Significant and Unavoidable Impact.

The analysis below determines the impact related to localized criteria pollutants to be less than significant with mitigation, while TAC emissions are found to be significant and unavoidable, even with mitigation.

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 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.

Localized Criteria Pollutants: Less than Significant Impact with Mitigation.

Localized Construction Emissions under the Localized Significance Thresholds. The SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors such as residential

[14] 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.

[15] 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.

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 proposed 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 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 CARB's Airborne Toxic Control Measures) are currently in place, and mitigation would be imposed at the project level, which may include use of special equipment.

Air Pollutants and Health Effects. 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 an unknown 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 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.[16] 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 4.2.F above, based on the scale of development associated with the anticipated General Plan build out scenario, 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.

Additionally, refer to the analysis provided under Threshold 4.2.2 for a discussion of potential construction and operational impacts relating to criteria air pollutants. With implementation of Compliance Measure CM AQ-1 and Mitigation Measure MM AQ-1, the potential health impacts associated with the construction of the proposed project would be less than significant.

Operation of new land uses consistent with the Land Use Plan of the proposed project would generate fewer criteria air pollutants in the City from area/stationary sources and mobile sources when compared to existing conditions as shown in Table 4.2.H; therefore, the health effects of the operational criteria air pollutant impacts associated with the proposed project would be less than significant.

[16] 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.

TAC Emissions: Significant and Unavoidable Impact.

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.[17] 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. Future projects would be subject to environmental review under CEQA and would be required to analyze potential emissions and include mitigation as appropriate.

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's jurisdiction, 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.

[17] SCAQMD. 2008. *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III)*. September.

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.[18] Children who live near major roadways and freeways have been found to have higher asthma rates and reduced lung function.[19] 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.[20] It has been found that outdoor concentrations are highest near the roadway and decrease with increasing distance downwind of the source.[21] 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.[22]

Table 4.2.I 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.

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.[23] The other sources of TACs 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 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 of the Air Quality Impact Analysis for this project, 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. Residential land uses would also be near or adjacent to areas designated for commercial and industrial uses and in proximity to existing permitted TAC sources.

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18 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.

19 CARB. 2013. Overview of the Children's Health Study. Website: http://www.arb.ca.gov/research/chs/over.htm (accessed March 2019).

20 SCAQMD. 2008. *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III).* September.

21 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.

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

23 SCAQMD. 2014. *Facility Information Details Maps. Pinpoints Locations of Permitted Facilities.*

Table 4.2.I: 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 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

Thus, new residential and other sensitive developments could be sited within the buffer distances (shown in Table 4.2.I) 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. 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.

As listed in Section 4.2.7.1 above, the proposed LUE includes the following Strategies and Policies that would allow for buffers and other provisions for reducing exposure of sensitive receptors to TAC emissions: Strategy No. 16, LU Policies 16-1 through 16-4; LU-M-55; and North Long Beach Strategy Nos. 1 through 10.

Goals and policies 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.

It is important to note that the proposed Neo-Industrial PlaceType 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 PlaceTypes 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.[24] 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.

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 MM AQ-3 would ensure the potential TAC health risk impact associated with the operation of the proposed project would be less than significant.

As previously identified, 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 operational characteristics of future specific development projects and the associated emissions cannot be determined at the time of this analysis; therefore, cumulative growth within the City could result in potential TAC health risks exceeding 10 in

[24] A clean industrial zone refers to manufacturing and industrial uses that generate minimal waste and air emissions.

one million and could cumulatively contribute to elevated health risks in the Basin, as identified in the Multiple Air Toxics Exposure Study (MATES). Therefore, in an abundance of caution, potential TAC health risks are considered a significant impact.

Threshold 4.2.4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact.

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.

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.

4.2.9 Mitigation Measures

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 Director of the City of Long Beach (City) Department of Development Services, or designee, 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, the following:

- 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. (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.)

- Suspend all soil disturbance activities when winds exceed 25 miles per hour (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 the California Air Resources Board's (CARB) 2010 engine emission standards at 0.01 grams per brake horsepower-hour (g/bhp-hr) of particulate (PM) and 0.20 g/bhp-hr of nitrogen oxides (NO_x) 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 shall make the records available for inspection.

MM AQ-2 Prior to future discretionary project approval, development project applicants shall prepare and submit to the Director of the City Department of Development Services, or designee, 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 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.

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.

4.2.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probably future projects within the cumulative impact area for air quality. The cumulative study area analyzed for potential air quality impacts is the Basin. Each project in the Basin is required to comply with SCAQMD rules and regulations and is subject to independent review.

The Basin is currently designated as a nonattainment area for the Federal ozone standard and $PM_{2.5}$ standard and as a nonattainment area for the State ozone, PM_{10}, and $PM_{2.5}$ standard. Thus, the Basin has not met the federal and State standards for these air pollutants. Future development that may occur with implementation of the project would contribute criteria pollutants to the area during project construction and operation. However, future development under the proposed project would be required to comply with CARB motor vehicle standards, SCAQMD regulations from stationary sources and architectural coatings, Title 24 energy efficiency standards, and the proposed LUE/UDE goals and policies. While existing City policies and regulations and proposed LUE/UDE goals and policies are intended to reduce impacts associated with air quality violations, specific standard conditions for future project developments that implement these policies and regulations are identified (Compliance Measure CM AQ-1) to ensure that the intended environmental protections are achieved. Consequently, emissions generated by development projects in addition to existing sources within the City would be considered to cumulatively contribute to the nonattainment designations of the Basin. Implementation of the LUE/UDE could contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP due to the increase in VMT associated with implementation of the project. Therefore, emissions generated from the proposed project would result in a significant cumulative air quality impact.

Since the combination, number, and size of projects that could be under construction at any one time are unknown, even with implementation of MM AQ-1, the proposed project would result in significant cumulative construction emissions from criteria pollutants. Additionally, even with implementation of Mitigation Measure MM AQ-2, operational impacts from criteria pollutant emissions would contribute to an O_3 exceedance, which could hinder the attainment of air quality standards. Further, 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. Therefore, air quality emissions associated with future development that may occur under the proposed project could result in cumulatively considerable impacts, even with implementation of mitigation.

4.2.11 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 MMs AQ-1, AQ-2, and AQ-3 would significantly reduce criteria air pollutant emissions generated during construction activities, operational activities, and the emission of TACs. While implementation of MMs 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 or risk level thresholds, and in an abundance of caution, potential impacts related to construction emissions (Threshold 4.2.2), operational activities (Threshold 4.2.2), toxic air contaminants (Threshold 4.2.3), and cumulative impacts would be considered to remain significant and unavoidable.

As concluded above under the discussion of construction emissions (Threshold 4.2.2), 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, MM 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 MM 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 MM AQ-3 would ensure that the potential exposure of sensitive receptors to substantial concentrations of criteria air pollutants and TACs (Threshold 4.2.3) from development of new sources of TACs would be reduced to the extent feasible; however, this impact would remain significant and unavoidable.

4.3 GLOBAL CLIMATE CHANGE

4.3.1 Introduction

This section provides a discussion of global climate change (GCC), existing regulations pertaining to GCC, and an analysis of greenhouse gas (GHG) emissions impacts associated with the construction and operation of potential development that would be allowed under the proposed City of Long Beach (City) General Plan Land Use Element and Urban Design Elements Project (proposed project). This analysis examines the short-term construction and long-term operational impacts within the planning area and evaluates the effectiveness of measures incorporated as part of the design of the proposed project. This section is based on information provided in the Air Quality Impact Analysis (LSA 2019) (Appendix B).

4.3.2 CEQA Baseline

Although the Notice of Preparation (NOP) was published in May 2015, the baseline for GCC is considered to be 2018 when the analysis for the Recirculated Draft Environmental Impact Report (EIR) was initiated. This provides an updated baseline that reflects current conditions related to GCC at the time the Recirculated Draft EIR was prepared.

4.3.3 Methodology

Climate change is a global issue and is described in the context of the cumulative environment because individual projects are unlikely to measurably affect GCC. Therefore, the project is considered in the context of multiple sectors and the combined efforts of many industries, including development.

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 long-term GHG emissions associated with project-related vehicular trips. Recognizing that the field of GCC analysis is rapidly evolving, the most recently advocated approaches 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. GHG emissions expected to be released from sources within the City primarily consist of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) and are described in greater detail below. In order to develop 2018 GHG emission levels, the sectors in which GHG emissions would be emitted have been characterized below to establish the basis upon which the analysis builds on to determine the levels of carbon dioxide, methane, and nitrous oxide emissions. The GHG emission calculations prepared for purposes of this EIR include the following sectors:

- **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, vehicle miles traveled (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 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (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 Land Use Element (LUE)/Urban Design Element (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 South Coast Air Quality Management District (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.

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 to the Air Quality Impact Analysis, which itself is included as Appendix B to this Recirculated Draft EIR). The GHG Emissions Reduction 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 draft CAAP, this efficiency target will be used for purposes of determining project significance. This metric is appropriate in that it would achieve per capita emissions that align with 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 is 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.

4.3.3.1 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.[2] 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.

4.3.4 Existing Environmental Setting

4.3.4.1 Existing Project Site

The planning area is currently developed and consists 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.

4.3.4.2 Sensitive Uses in the Project Vicinity

Sensitive receptors in the City include residences, retirement facilities, hospitals, schools, recreational land uses, and similar uses that are sensitive to air pollutants. Construction and operation of development allowed under the LUE could adversely affect nearby sensitive land uses.

4.3.4.3 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 ±

[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.

[2] AECOM. 2019. *City of Long Beach Climate Action Adaptation Plan GHG Emissions Reduction Target Options Memorandum #2 – 2045 Carbon Neutrality*. May.

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 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.[3]

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 only the six gases listed above.

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 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

[3] 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.

4.3.A 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 4.3.A: 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 manmade 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 manmade 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.[4] 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.

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.[5]

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

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

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

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.[6]

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[7] 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 manmade GHG emissions (CO_2e) in California in 2016.[8]

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 and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb a million times more energy than CO_2.[9] 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. 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.

4.3.4.4 Effects of Global Climate Change

Effects from GCC may arise from temperature increases, climate-sensitive diseases, extreme weather events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems

6 Ibid.

7 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.

8 Ibid.

9 United States Environmental Protection Agency (USEPA). 2015. *Black Carbon*. Website: www3.epa.gov/blackcarbon/basic.html (accessed March 2019). September.

include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. GCC may also contribute to air quality problems from increased frequency of smog and particulate air pollution.[10]

Additionally, according to the 2006 California Climate Action Team (CAT) Report,[11] the following climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC), can be expected in California over the course of the next century:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures.[12]

- Rise in global average sea level, primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets.[13]

- Changes in weather that include widespread changes in precipitation, ocean salinity, wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones.[14]

- Decline of the Sierra snowpack, which accounts for approximately one-half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years.[15]

- Increase in the number of days conducive to O_3 formation by 25–85 percent (depending on the future temperature scenario) in high O_3 areas of Los Angeles and the San Joaquin Valley by the end of the 21st century.[16]

- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.[17]

A summary of these potential effects are identified in Table 4.3.B.

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10 USEPA. 2016. *Climate Impacts on Human Health*. April. Website: https://www3.epa.gov/climatechange/impacts/health.html (accessed March 2019).

11 California Environmental Protection Agency (Cal/EPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

12 Ibid.

13 Ibid.

14 IPCC. 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*. February.

15 Cal/EPA. 2006. op. cit.

16 Cal/EPA. 2006. op. cit.

17 Ibid.

Table 4.3.B: Potential Impacts of Global Warming and Expected Consequences for California

Potential Water Resource Impacts	Anticipated Consequences Statewide
Reduction of the State's average annual snowpack	● Specifically, the decline of the Sierra snowpack, would lead to a loss in half of the surface water storage in California by 70% to 90% over the next 100 years ● Potential loss of 5 million acre-feet or more of average annual water storage in the State's snowpack ● Increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply ● Higher surface evaporation rates with a corresponding increase in tropospheric water vapor
Rise in average sea level	● Potential economic impacts related to coastal tourism, commercial fisheries, coastal agriculture, and ports ● Increased risk of flooding, coastal erosion along the State's coastline, seawater intrusion into the Delta and levee systems
Changes in weather	● Changes in precipitation, ocean salinity, and wind patterns ● Increased likelihood for extreme weather events, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones
Changes in the timing, intensity, location, amount, and variability of precipitation	● Potential increased storm intensity and increased potential for flooding ● Possible increased potential for droughts ● Long-term changes in vegetation and increased incidence of wildfires ● Changes in the intensity and timing of runoff ● Possible increased incidence of flooding and increased sedimentation ● Sea level rise and inundation of coastal marshes and estuaries ● Increased salinity intrusion into the Sacramento-San Joaquin River Delta (Delta) ● Increased potential for Delta levee failure ● Increased potential for salinity intrusion into coastal aquifers (groundwater) ● Increased potential for flooding near the mouths of rivers due to backwater effects
Increased water temperatures	● Increased environmental water demand for temperature control ● Possible increased problems with foreign invasive species in aquatic ecosystems ● Potential adverse changes in water quality, including the reduction of dissolved oxygen levels ● Possible critical effects on listed and endangered aquatic species
Changes in urban and agricultural water demand	● Changes in demand patterns and evapotranspiration
Increase in the number of days conducive to O_3 formation	● Increased temperatures ● Potential health effects, including adverse impacts to respiratory systems

Source: U.S. Department of the Interior, Environmental Water Account Draft Supplemental EIS/EIR to the Environmental Water Account Final EIS/EIR, Bureau of Reclamation Mid-Pacific Region, Sacramento, California (October 2007).
EIR = Environmental Impact Report
EIS = Environmental Impact Statement
O_3 = ozone

4.3.4.5 Effects of Rising Ocean Levels in California

Rising ocean levels, more intense coastal storms, and warmer water temperatures may increasingly threaten the Long Beach coastal region. As previously described, global surface temperatures have

increased by 1.5 degrees Fahrenheit (°F) during the period from 1880 to 2012, with temperatures anticipated to rise in California by 3 to 10.5°F by the end of the century.

Rising sea levels may affect the natural environment in the coming decades by eroding beaches, converting wetlands to open water, exacerbating coastal flooding, and increasing the salinity of estuaries and freshwater aquifers. Coastal headlands and beaches are expected to erode at a faster pace in response to future sea level rise. The California Coastal Commission estimates that 450,000 acres of wetlands exist along the California coast,[18] but additional work is needed to evaluate the extent to which these wetlands would be degraded over time, or to what extent new wetland habitat would be created if those lands are protected from further development. Cumulatively, the effects of sea level rise may be combined with other potential long-term factors such as changes in sediment input and nutrient runoff. The cumulative impacts of physical and biological change due to sea level rise on the quality and quantity of coastal habitats are not well understood.[19]

Sea level along the west coast of the United States is affected by a number of factors, including climate patterns such as El Niño, effects from the melting of modern and ancient ice sheets, and geologic processes such as plate tectonics. Regional projections for California, Oregon, and Washington show a sharp distinction at Cape Mendocino in northern California. South of that point, sea-level rise is expected to be very close to global projections. Projections are lower north of Cape Mendocino because the land is being pushed upward as the ocean plate moves under the continental plate along the Cascadia Subduction Zone.

The *Final Climate Change Vulnerability Assessment Results*[20] (2018) for the Long Beach CAAP identifies the California Ocean Protection Council's (OPC) guidance on sea level rise in its *State of California Sea-Level Rise Guidance 2018 Update* (OPC, March 2018), which relied on previous findings from its *Rising Seas in California, an Update on Sea-Level Rise Science* [April 2017]). The OPC developed future sea level rise projections at each tide station along the California coast. The OPC guidance incorporated a range of global emissions scenarios ranging from aggressive emissions reductions to no emissions reductions through the end of the century. Sea level rise will cause many harmful economic, ecological, physical, and social impacts but incorporating sea level rise impacts into agency decisions can help mitigate some of these potential impacts. The updated State of California's Sea-Level Guidance Document recommends the ranges of sea level rise presented in the March 2018 OPC guidance report as a starting place for analysis of potential impacts related to sea level rise. Table 4.3.C presents sea level rise projections for Los Angeles based on the OPC guidance.

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18 California Coastal Commission (CCC). *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone*. Website: http://www.coastal.ca.gov/wetrev/wetch4.html (accessed March 2019).

19 Climate Change Science Program (CCSP) 4.1. January 15, 2009, 1 of 784 Final Report, United States CCSP, Synthesis and Assessment Product 4.1. *Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region.* Lead Agency: U.S. Environmental Protection Agency, Other Key Participating Agencies: U.S. Geological Survey, National Oceanic and Atmospheric Administration. Contributing Agencies: Department of Transportation.

20 AECOM. 2018. *Final Climate Change Vulnerability Assessment Results.*

Table 4.3.C: Sea Level Rise Projections for Los Angeles, California

Year (Emissions Scenario)	Inches about 1991–2009 Mean Sea Level (in)			
	Median (50% probability of exceedance)	Likely Range (67% likely range)	1-in-20 Chance (5% probability of exceedance)	1-in-200 Chance (0.5% probability of exceedance)
2030	4	2 to 6	7	8
2050	8	6 to 12	14	22
2100 (low emissions)	16	8 to 25	36	65
2100 (very high emissions)	26	16 to 38	49	80

Source: *State of California Sea-Level Rise Guidance 2018 Update* (OPC, March 2018).
in = inches

Rising sea levels may also affect the built environment, including coastal development such as buildings, roads, and infrastructure. Coastal areas within the City are relatively flat, low-lying, and developed and may be directly affected by the change in sea level resulting from GCC.

Areas that are essentially at sea level are potentially exposed to the rising of the ocean levels and could result in on-site flood conditions. A recent wave uprush study completed for a project along the coast in Long Beach indicated that sea levels along the Long Beach Coast could be expected to rise 0.5 to 2.6 feet (ft) by 2060 and 1.4 to 5.5 ft by 2100.[21] This is consistent with the sea level rise projections included in Table 4.3.C above. In addition, the *Final Climate Change Vulnerability Assessment Results*[22] report identifies the sea level rise vulnerability for geographical areas, buildings and facilities, parks and open space, transportation assets, energy assets, stormwater assets, wastewater assets, and potable water assets based on 11, 24, 36, and 66 inches of sea level rise.

4.3.4.6 Existing Greenhouse Gas Emissions

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks (an artificial reservoir of emissions) of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, California, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

Global Emissions. Worldwide emissions of GHGs in 2016 totaled approximately 26 billion metric tons of CO_2e.[23] Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

[21] Ibid.
[22] AECOM. 2018. *Final Climate Change Vulnerability Assessment Results.*
[23] United Nations Framework Convention on Climate Change (UNFCCC). 2016. GHG data from UNFCCC. Website: https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc (accessed February 2019).

United States Emissions. In 2015, the United States emitted about 6.6 billion metric tons of CO_2e or about 21 metric tons per year per person. The total 2015 CO_2e emissions represent a 3.5 percent increase since 1990 but a 10 percent decrease since 2005. Of the six major sectors nationwide – residential, commercial, agricultural, industry, transportation, and electricity generation – electricity generation accounts for the highest amount of GHG emissions (approximately 29 percent), with transportation second at 27 percent; these emissions are generated entirely from direct fossil fuel combustion[24]

State of California Emissions. According to CARB emission inventory estimates, the State emitted approximately 429.4 million metric tons (MMT) of CO_2e emissions in 2016. This is a decrease of 12 MMT CO_2e since 2015.[25]

CARB estimates that transportation was the source of approximately 39 percent of the State's GHG emissions in 2016, followed by industrial sources at 21 percent and electricity generation at 16 percent. The remaining sources of GHG emissions were residential and commercial activities at 9 percent, agriculture at 8 percent, high-GWP gases at 5 percent, and recycling and waste at 2 percent.[26]

City of Long Beach Emissions. As part of preparing the City's CAAP, the City developed a baseline GHG emissions inventory for the year 2015. As shown in Table 4.3.D below, the City's 2015 total emissions were 3.1 MMT of CO_2e with the majority coming from transportation (50 percent) and building energy use (44 percent). The remaining 6 percent comes from solid waste and wastewater.

24 USEPA. 2017. Inventory of U.S. Greenhouse Gas Emissions and Sinks. 1990-2015. Website: www.epa.gov/sites/production/files/2017-02/documents/2017_complete_report.pdf (accessed February 2019).

25 CARB. 2018. op. cit.

26 Ibid.

Table 4.3.D: City of Long Beach 2015 Greenhouse Gas Inventory

Sector	MT CO_2e/yr	Percent of Total
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
Off-road Transportation	14,947	<1
Waste	**176,851**	**6**
Solid Waste	173,259	6
Wastewater	3,592	<1
TOTAL	**3,100,468**	**100**

Source: City of Long Beach (May 2019).
CO_2e = carbon dioxide equivalent
MT CO_2e/yr = metric tons of carbon dioxide equivalent per year

In addition, to provide a 2018 baseline for the purposes of this plan level analysis, an emissions inventory of the City of Long Beach was conducted based on the existing land uses and is shown in Table 4.3.E, which identifies existing land uses as residential, commercial, office, and industrial emissions. The GHG emissions inventory includes the following sectors:

- **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.
- **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 emissions 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.

Table 4.3.E: Existing City of Long Beach LUE Major Areas of Change 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 (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.
CalEEMod = California Emission Estimator Model
CEQA = California Environmental Quality Act
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
LUE = Land Use Element
MT CO_2e/yr/SP = metric tons of carbon dioxide equivalent per year per service population
VMT = vehicle miles traveled

The results of this inventory vary from the analysis conducted for the CAAP as the industrial sources of emissions that require a permit from the SCAQMD are not included in the City's emissions inventory per guidance for CAAP inventories. Additionally, aviation and watercraft emissions are not included (though a subset of these emissions are included in the CAAP inventory such as fuel use from ground service equipment at the airport and harbor craft and hoteling ocean-going vessels within the City boundaries). 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.

Emissions for the City:[27]

- **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.

4.3.5 Regulatory Setting

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

4.3.5.1 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 United States Environmental Protection Agency (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.

[27] 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 (Governor's Office of Planning and Research 2008).

4.3.5.2 State Regulations

CARB is the lead agency for implementing climate change regulations in the State. Since its formation, 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, Assembly Bill (AB) 1493 was enacted on July 22, 2002. AB 1493 requires 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 CARB in 2004, but the needed waiver of CAA Preemption was not granted by the USEPA until June 30, 2009. 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 (EO) 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. CARB has established the level of greenhouse gas emissions in 1990 at 427 MMT of CO_2e. The emissions target of 427 MMT

requires the reduction of 169 MMT from the State has projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires 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 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 emission 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, 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. 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 (SB) 375.

In addition to reducing greenhouse gas emissions to 1990 levels by 2020, AB 32 directed 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 EO 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 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, 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).[28] 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. 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.[29]

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 EOs 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,[30] to reflect the 2030 target set by EO B-30-15 and codified by 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 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.

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

29 CARB. 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

30 CARB. 2017. *California's 2017 Climate Change Scoping Plan*. November.

The California Natural Resources Agency adopted the amendments to the *State 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 ARB 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 SCAG will work with local jurisdictions in the development of Sustainable Communities Strategies 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 4.3.F.

Table 4.3.F: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (%)	By 2035 (%)
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 EO B-30-15 on April 29, 2015, which added the immediate target of the following:

- 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. 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 (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 EO 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 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. EO 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." EO 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.[31]

4.3.5.3 Local and Regional Policies and Regulations

Southern California Association of Governments. 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.

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

City of Long Beach *Sustainable City Action Plan*. The City of Long Beach's *Sustainable City Action Plan* (SCAP) was adopted in February 2010.[32] 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 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

4.3.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines* Based on these thresholds, implementation of the proposed project would have a significant adverse impact related to global climate change if it would:

Threshold 4.3.1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significance impact on the environment; or

Threshold 4.3.2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

[32] City of Long Beach. 2010. *Sustainable City Action Plan*. February.

4.3.7 Compliance Measures and Project Design Features

No Compliance Measures or Project Design Features (PDFs) have been identified with respect to GCC and GHG emissions; however, the update to the LUE includes several policies to support sustainable urban development patterns as identified below.

4.3.7.1 Proposed Land Use Element Strategies and Policies

The following proposed Goals, Strategies, and Policies are applicable to the analysis of GHG and GCC and would replace existing goals, strategies, and policies outlined in the City's existing LUE and SRE following project approval:

Land Use Element.

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.

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.

4.3.8 Project Impacts

Threshold 4.3.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Significant and Unavoidable Impact.

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 project. Table 4.3.G 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 CARB's Scoping Plan, including the Pavley fuel efficiency standards, Low Carbon Fuel Standard (LCFS) for fuel use (transportation and off-road), and a reduction in carbon intensity from electricity use.

Table 4.3.G: 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 (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
LUE = Land Use Element
UDE = Urban Design Element

As shown in Table 4.3.G, 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.

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. Although the traffic analysis indicates VMT in Long Beach will be reduced 9 percent from the existing conditions with the proposed project, VMT during off-peak times increases slightly 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 LUE 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, compared to the no project scenario. 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).

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 in 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.

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. Implementation of the proposed project would result in lower GHG emissions within the City in the future year when compared to existing conditions due to the way in which the model calculates non-peak trips for overcrowded households; however, as described above, the proposed project would result in higher VMT rates 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 that would contribute to reduced VMT. In addition, infill development near public transit would help create sustainable development patterns. As listed in Section 4.3.7.1 above, the LUE includes the following strategies and policies that would result in further reductions in GHG emissions: Strategy No. 2, LU Policies 2-1 and 2-2; Strategy No. 4, LU Policies 4-1 and 4-2; Strategy No. 20, LU Policies 2-1 and 20-8, LU-M-3, LU-M-8 through 12, LU-M-59, LU-M-62 through 79; and Eastside Land Use Strategy 10.

Implementation of these land use strategies would reduce emissions to the extent feasible. In addition, Mitigation Measure (MM) 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 MM GHG-1.

Threshold 4.3.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant with Mitigation Incorporated.

The following discusses the consistency of the proposed project to the State's GHG reduction goals, 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 EO 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 4.3.G, 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 the service population threshold would measure progress in meeting the AB 32 and SB 32 reduction targets.

The proposed project includes various policies as listed above 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. In order to achieve compliance with State GHG reduction targets, the CAAP has been identified as a mitigation measure (MM GHG-1) to reduce GHG impacts associated with growth anticipated under the proposed project.

CARB Scoping Plan: In accordance with AB 32, 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 Corporate Average Fuel Economy [CAFE] standards). These statewide measures are applicable uniformly throughout the State, and all future developments under the proposed project would be in compliance.

Table 4.3.H 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.

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 reduced 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. Impacts are, therefore, considered less than significant.

Table 4.3.H: 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 (2019).
CALGreen = California Green Building Standards
GHG = greenhouse gas
RPS = Renewable Portfolio Standard

Existing Regulations and Compliance Measures: The following list includes State and local regulations and conditions.

- **State**
  - **Executive Order S-3-05 and Executive Order 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.

4.3.9 Mitigation Measures

The following mitigation measure would reduce GHG emissions associated with 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 a CAAP to the City Council for adoption. 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, which 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.

4.3.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines,* cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for GCC. However, unlike the cumulative analysis for many topics that address the combined impacts of a proposed project in addition to related projects in a project study area, GCC is affected by a larger range of development activity. Climate change is a global issue and is already addressed as a cumulative impact because individual projects are unlikely to measurably affect GCC. Although the State requires Metropolitan Planning Organizations and other planning agencies to consider how regionwide planning decisions can impact GCC, there is currently no established non-speculative methodology for assessing the cumulative impact of proposed independent private party development projects.

Although the proposed project is expected to emit GHGs, the emission of GHGs by any single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHGs from more than one project and many sources in the atmosphere that may result in GCC. The resultant consequences of that climate change, including sea level rise, could cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to State or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change. Due to the complex physical, chemical, and atmospheric mechanisms involved in GCC, it is speculative to identify the specific impact, if any, to GCC from one project's incremental increase in global GHG emissions. As such, a project's GHG emissions and the resulting significance of potential impacts are more properly assessed on a cumulative basis. Thus, the analysis conducted above is essentially already a cumulative analysis because it takes into consideration Statewide GHG reduction targets and demonstrates that the proposed project would be consistent with those targets.

The State has mandated a goal of reducing statewide emissions to 1990 levels by 2020 and to 80 percent below 1990 levels by 2050, even though Statewide population and commerce are predicted to continue to expand. In order to achieve these goals, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. However, there are currently no applicable significance thresholds, specific reduction targets, and/or approved policy or guidance to assist in determining significance at the cumulative level. Additionally, there is currently no generally accepted methodology to determine whether GHG emissions associated with a specific project represent new emissions or existing, displaced emissions.

As previously stated, the proposed project would result in a GHG emission profile that is lower than existing GHG emissions within the City. Additionally, since climate change is a global issue, it is unlikely that the proposed project would generate enough GHG emissions to influence GCC on its own. Because the proposed project's impacts alone would not cause or significantly contribute to GCC, project-related CO_2e emissions and their contribution to GCC impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts. Therefore, the proposed project would not result in a significant long-term cumulative impact on GCC (including sea level rise).

As shown previously in Table 4.3.C, projected sea level rise for Los Angeles, California is anticipated to have a median increase of 8 inches, with a likely increase of 6 to 12 inches by 2050. Rising sea levels may affect the built environment, including coastal development such as buildings, roads, and infrastructure. However, future discretionary projects facilitated under the proposed project would be planned in consideration of the conditions at the time they are proposed and would be evaluated for their potential to be affected by the change in sea level resulting from GCC during environmental review. Sea level rise is a slow gradual condition and future projects would be implemented over the proposed project's planning horizon year 2040 and would undergo environmental review, as necessary. Due to the programmatic nature of the project, the uncertainty in the timing regarding when sea level rise could affect coastal areas within the City limits, and because the future discretionary development proposals within the City would be subject to environmental review under CEQA and would be required to analyze potential sea level rise impacts and include mitigation as appropriate, cumulative sea-level rise impacts would be less than significant.

4.3.11 Level of Significance after Mitigation

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 at the horizon year of 2040. While Mitigation Measure MM GHG-1 would serve to reduce GHG emissions associated with build out of the project, GHG emission impacts would remain significant and unavoidable because compliance with future efficiency targets cannot be assured.

MM GHG-1 would require the City to adopt and implement a CAAP. Implementation of the CAAP that meets the reduction targets of AB 32 and SB 32 would bring the City into compliance with Statewide GHG emission reduction goals. Therefore, MM GHG-1 would reduce impacts related to consistency with plans, policies, and regulations to a less than significant level.

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4.4 LAND USE AND PLANNING

4.4.1 Introduction

This section of the Recirculated Draft Environmental Impact Report (EIR) analyzes the direct land use impacts associated with the long-term implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project). The key focus of the analysis is the potential for growth and development projected, as a result of project approval, to conflict with relevant policy and planning documents. The consistency analysis in this section was prepared in accordance with the California Environmental Quality Act (CEQA), specifically *State CEQA Guidelines* Section 15125(d). Information presented in this section is based on information provided in the following documents: the proposed General Plan Land Use and Urban Design Elements (March 2018) (Appendix H), the City of Long Beach's (City) existing General Plan (as amended), the City's Zoning Code (Title 21), and associated Zoning Map, the City's Local Coastal Program (LCP) (1980), the Port of Long Beach Port Master Plan (PMP) (1978), the Los Angeles County Airport Land Use Plan (ALUP) (1991), the Orange County Airport Environs Land Use Plan (AELUP) for the Joint Forces Training Base (JFTB) at Los Alamitos (1975), the Draft 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2012–2035 RTP/SCS), the 2008 Regional Comprehensive Plan (2008 RCP), and the California Coastal Act of 1976 (CCA) (Public Resources Code [PRC], Division 20).

4.4.2 CEQA Baseline

Since the time the Notice of Preparation (NOP) was published (May 2015), the City has conducted an updated inventory of existing land uses in the planning area (refer to Table 4.4.A, below). This inventory was collected in September 2017, analyzed, and published on the LUE update website in November 2017. The inventory has been incorporated into this section of the Recirculated Draft EIR for the purpose of evaluating land use impacts associated with project implementation. Therefore, this updated land use inventory forms the baseline for addressing land use impacts based on the proposed LUE.

In addition to updated land use data, several updates to applicable land use documents have occurred since the distribution of the 2016 Draft EIR for the proposed project, including updates to the 2016 RTP/SCS and the Southeast Area Specific Plan (SEASP). These updates have been incorporated into the Regulatory Setting portion of this section and are incorporated into the land use consistency analysis provided below and as contained in Appendix C (Land Use Consistency Analysis) of this Recirculated Draft EIR.

4.4.3 Methodology

The impact analysis of this section considers the physical impacts of the proposed project related to land use compatibility and considers whether or not there are potential inconsistencies of the proposed project with applicable planning documents from the City and other agencies with relevant plans or policies. Consistency of a project with an applicable plan is made by the Lead Agency when it acts on the project. The analysis in this Recirculated Draft EIR discusses the findings of policy review and is meant to provide a guide for decision-makers during policy interpretation.

A project's inconsistency with a policy is only considered significant if such inconsistency would cause significant physical environmental impacts. This Recirculated Draft EIR section determines whether any project inconsistencies with public land use policies and documents would be significant and whether mitigation is feasible. Under this approach, a policy conflict is not in and of itself considered a significant environmental impact. An inconsistency between a proposed project and an applicable plan is a legal determination that may or may not indicate the likelihood of environmental impact. In some cases, an inconsistency may be evidence that an underlying physical impact is significant and adverse, while in other cases such an inconsistency may not result in significant physical impacts.

4.4.4 Existing Environmental Setting

4.4.4.1 Existing Planning Area

The General Plan addresses all land within the City's jurisdictional limits and corresponding Sphere of Influence. Throughout this Recirculated Draft EIR, these areas are referred to as the "planning area."

The planning area encompasses 50 square miles (approximately 33,000 acres) 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 the southern region of Los Angeles County. The planning area 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 on the east by the Cities of Lakewood, Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach. Additionally, the City of Signal Hill is centrally located within the planning area and is completely surrounded by development in the City of Long Beach.

4.4.4.2 Existing Land Uses

As illustrated by Table 4.4.A and Figure 4.4.1, existing land uses in the City include a mix of residential, commercial, open space, industrial, institutional, church, and utility/right-of-ways uses. Figure 4.4.1, Existing General Plan Land Use Designations, shows the planning area of the City and existing land uses within the planning area. Table 4.4.A is based on data from the Los Angeles County Assessor, whereas Figure 4.4.1 shows existing land use data provided by SCAG for the 2016 RTP. It should be noted that there are some limitations to these sets of data and that these two data sources differ because certain categorizations of land uses differ. For example, the Los Angeles County Assessor data categorizes most city park space as "Institutional/Government", whereas some readers would expect these uses to fall under "open space." Per the most updated records from the City Department of Parks, Recreation and Marine, the City maintains 2,750 acres of parks and open space. Further, the 3,520 acres of land that comprise the Port of Long Beach are categorized as "Institutional/Government" as shown in the table below. In contrast, data from SCAG displayed in Figure 4.4.1 categorize the Port as "Industrial" land. These land uses are described in further detail below.

Table 4.4.A: Existing Citywide Land Uses

Land Use Type	Acreage	Percentage of Total Acreage
Commercial	2,780.21	8.43 %
Single-Family Residential	10,288.28	31.20 %
Multi-Family Residential (Low Density)	2,489.45	7.55 %
Multi-Family Residential (Moderate Density)	1,862.27	5.65 %
Neo-Industrial	558.06	1.69 %
Industrial	3,592.96	10.89 %
Institutional/Government	10,515.78	31.89 %
Open Space	491.81	1.49 %
Church	211.64	0.64 %
Utility/Right-of-Way/Miscellaneous	189.40	0.57 %
Total	**32,979.86**	**100.00 %**

Source: City of Long Beach Analysis of Los Angeles County Assessor Data (November 2017).

Residential Uses. Residential uses are the predominant land use currently characterizing the City, comprising approximately 45 percent of the City's total land area (approximately 14,640 acres) (refer to Table 4.4.B, below). The City currently has a total of 163,794 housing units, of which most are low-density single-family and duplex homes (approximately 31 percent; 10,288.28 acres).

Table 4.4.B: Existing Citywide Residential Land Uses

Land Use Type	Acreage	Percentage of Residential Acreage	Percent of Total Acreage in City
Low Density Residential (Single-Family and Duplex)	10,288.28	70.28 %	31.20 %
Medium Density-Low Residential	2,489.45	17.00 %	7.55 %
Medium Density-Moderate Residential	1,862.27	12.72 %	5.65 %
Total Residential Acreage	**14,640**	**100.00 %**	**44.40 %**

Source: City of Long Beach Analysis of Los Angeles County Assessor Data (November 2017).
Note: Citywide acreage is 32,979.9.

Existing residential uses are distributed throughout the planning area and vary widely in type and density. For example, residential uses include detached single-family homes, mixed-style homes (i.e., duplexes, triplexes, and townhomes), and moderate- to high-density housing (i.e., apartments and condominiums). Higher density residential uses are located closer to the City's Downtown area whereas lower density uses are located throughout the City and along its urban edge. The primary contributing factor for the wide range of housing densities and styles in the City is attributable to the time period during which the housing units were constructed. For example, between 1900 and 1930, smaller single-family homes were built on smaller lots and typically included detached garages, as vehicle ownership was not widespread. Homes built between the 1930s and 1950s were developed at a mass-scale on larger lot sizes and were constructed on plots by a single developer or builder. However, from the 1960s to 1980s, developers concentrated on converting small, single-family units to larger apartment complexes, as many of the large vacant swaths of land in the City had already

been developed. Infill housing development continues in the City to the present day, and largely occurs within more urban areas, such as Downtown Long Beach.

Commercial and Office Uses. In total, commercial and office uses comprise approximately 8 percent of the total planning area (2,780.21 acres).

Commercial uses in the planning area consist primarily of commercial corridors, traditional retail strip commercial uses, pedestrian-oriented neighborhood retail areas, and auto-dominated shopping centers. The primary commercial core in the City is the Downtown area, which is located in the southernmost portion of the City in between the Los Angeles River and Alamitos Boulevard. While the City's Downtown serves as its primary commercial hub, there are several smaller commercial districts located throughout the City that serve surrounding residential neighborhoods. In addition, several commercial corridors are present in the City; they connect the Downtown area with surrounding communities. Examples of these corridors include, but are not limited to, Long Beach Boulevard, Pacific Avenue, Atlantic Avenue, and Alamitos Avenue.

Office uses are found throughout the planning area, primarily near commercial corridors and centers. Larger office buildings are primarily located in the Downtown area, near the Long Beach Airport, and along Long Beach Boulevard and San Antonio Drive. Existing office buildings range in height from two to 30 stories and typically accommodate parking through the use of parking structures.

The City also has a number of commercial areas that are characterized by mixed-use development. These areas include a combination of land use, and often include a mix of commercial, office, and/or residential uses. One example of mixed-use development in the City is the CityPlace Shopping Center, which occupies six blocks within the Downtown, and includes residential, commercial, and restaurant uses. Douglas Park is also an example of a mixed-use development, as it includes a combination of office and industrial spaces.

Industrial Uses. Industrial and Neo-industrial offices uses comprise 12.59 percent of the planning area (4,151.02 acres). Heavy industrial uses in the City are primarily located near the Port of Long Beach, rail lines, and freeways. Older industrial uses are located adjacent to residential uses, whereas newer industrial uses are located adjacent to each other and are separated from residential and commercial uses. Industrial uses in the City include activities associated with the Port of Long Beach, trucking, packaging, assembly, light manufacturing, fabrication shops, food processing, auto and marine repair shops, and outdoor storage areas.

Institutional and Government Uses. Institutional and government uses comprise 31.89 percent of the planning area (10,515.78 acres). These uses consist of civic uses, schools, colleges/universities, medical facilities, libraries, certain government owned parks and open space, and community centers. Examples of institutional and governmental uses include the Port of Long Beach, Long Beach Civic Center, Long Beach Airport, California State University Long Beach, Long Beach City College, several private colleges and universities, Long Beach Memorial Medical Center, the Veterans Administration Long Beach Medical Center, St. Mary Medical Center, Pacific Hospital of Long Beach, and Community Hospital. These uses are generally located in the southwestern, central, and southeastern portions of the City.

Open Space Uses. As identified by Table 4.4.A, open space and recreational uses in the City comprise 1.49 percent of the City (491.81 acres) and range from small mini parks to large special uses areas. As previously stated, the percentage of open space uses reported by the Los Angeles County Assessor's office underrepresents the total amount of park acreage in the City, as park uses are categorized by the Los Angeles County Assessor's office as "Intuitional/Governmental." In reality, the City maintains approximately 2,750 acres of parks and open space uses (approximately 8.34 percent of the total planning area). The most prominent open space areas in the City include El Dorado Regional Park, cemeteries, golf courses, marinas, bays, and wetlands. The majority open space uses are located along waterways and are scattered throughout residential neighborhoods.

Religious Uses. Religious uses comprise less than 1 percent of the total land area in the planning area (211.64 acres). These uses are scattered throughout the City and are primarily located within and adjacent to residential neighborhoods.

Utility/Right-of-Way/Miscellaneous. Utility easements and right-of-way areas on private parcels also comprise less than one percent of the total planning area in the City (0.57 percent; 189.40 acres). These areas are typically situated along utility corridors (e.g., transmission power line), roadways, and freeways.

4.4.4.3 Neighborhoods and Community Plan Areas

While the City consists of many distinct land uses, there are nine primary community plan areas that combine to form the City's unique identity (refer to Figure 4.4.2, Community Plan Areas). These community plan areas are listed and briefly described below.

1. **North Long Beach.** The North Long Beach area is located west of Interstate 710 (I-710) and includes the residential and industrial areas located west of Cherry Avenue and residential uses north of the Union Pacific Railroad (UPRR). This area predominantly consists of residential and commercial uses; however, North Long Beach is also home to several public schools and a retail/business district.

2. **Bixby Knolls.** The Bixby Knolls area consists of the California Heights, Los Cerritos, Bixby Knolls, Bixby Highlands, Scherer Park, Ridgewood Heights, and Ranton Circle neighborhoods. This community is home to several historic resources as many of the residential units consist of custom homes built between the 1920s and 1940s. This area also includes a retail corridor along Atlantic Avenue between San Antonio Drive and the Interstate 405 (I-405) freeway.

3. **Westside and Wrigley.** The Westside and Wrigley community is located west of I-710 and includes the Westside and Arlington neighborhoods. The majority of the housing units in this area are single-family detached homes, also constructed between the 1920s and 1940s. This community is also home to Cabrillo High School, the Villages at Cabrillo, and the Long Beach Jobs Center.

4. **Eastside.** The Eastside area is bound by the Cities of Los Alamitos and Hawaiian Gardens to the East, the City of Lakewood to the north, and the I-405 freeway to the south. This community is the largest of the nine community plan areas. Predominant uses in the Eastside

area include low-density post-World War II housing, shopping centers, schools, religious institutions, and parks. This community plan area also contains an 800-acre open space area that features a community center and a 100-acre nature center, basketball and volleyball courts, a skate park, an archery range, picnic areas, a disc golf course, tennis courts, an 18-hole golf course, playgrounds, and a fishing lake and pond.

5. **Central.** The Central area includes both the Central Area West and Central Area East neighborhoods. The primary uses in this community plan area are residential and commercial. In addition to being one of several historic areas within the City, the Central area is also home to Cambodia Town, a 1-mile long business corridor along Anaheim Street.

6. **Traffic Circle.** The Traffic Circle area consists of a large multi-lane roundabout at the intersection of Pacific Coast Highway (PCH) and Lakewood Boulevard, as well as the Stearns Park, Alamitos Ridge, and Bryant School neighborhoods. Within this area, commercial and high-density residential uses are concentrated adjacent to the roundabout, with more traditional suburban residential neighborhoods located further north.

7. **Downtown.** The Downtown area is the primary commercial hub in the City. This area consists of the Washington School, Wilmore City, West End, East Village, Promenade, North Pine, and the Downtown Shoreline neighborhoods. As the economic center of the City, the Downtown is comprised of commercial, financial, institutional, entertainment, retail, maritime, and high-density/moderate residential uses.

8. **Midshore.** The Midshore area is comprised of Alamitos Beach, Rose Park, Franklin School, Bluff Heights, and Bluff Park, most of which are considered historic residential districts. While Midshore is home to several historic residential homes, new high-density residential units line Ocean Avenue within this community plan area.

9. **Southeast.** The Southeast area is comprised of Alamitos Heights, Belmont Heights, Belmont Shore, Belmont Park, Naples, Peninsula, Recreation Park, University Park Estates, and the Southeast Area Specific Plan (SEASP) neighborhoods. This area is predominantly characterized by residential and commercial uses; however, the variety and type, and architectural styles of residential and commercial uses are unique to each neighborhood within this area.

4.4.5 Regulatory Setting

4.4.5.1 Federal Policies and Regulations

There are no federal land use policies or regulations that are applicable to the proposed project with respect to land use regulation.

4.4.5.2 State Policies and Regulations

California Government Code Section 65300. California planning law requires every city and county in California to adopt a "comprehensive, long-term general plan for physical development." State law also requires the General Plan to identify goals and policies for the planning area as they relate to land use and development, provide a framework within which local decision-makers can make land use decisions, provide the public with an opportunity to participate in the decision-making process, and inform the community of the regulations guiding environmental protection and land use development decisions within the City.

State law also requires a General Plan to address seven mandatory topics, which include land use, circulation, housing, conservation, open space, noise, and safety, but allows for flexibility in how these topics are addressed within the General Plan. While these seven elements are required, State law allows for local jurisdictions to adopt "optional" elements beyond those required by law. However, once adopted, these "optional" elements have the same force and effect as policies related to those elements required by State law.

The current Long Beach General Plan includes elements that address each of the seven mandatory issue areas required by State law, but goes beyond these required elements by adopting the Historic Preservation Element (2010), the Air Quality Element (1996), the Seismic Safety Element (1988), and the Scenic Routes Element (SRE) (1975). The proposed project includes the replacement of the required existing Land Use Element (LUE) (1989) with the proposed LUE and the replacement of the existing SRE (1975) with the proposed "optional" Urban Design Element (UDE).

California Coastal Act. The California Coastal Act (CCA; Public Resources Code 30000) of 1976 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; (4) ensure priority for coastal-dependent development over other development on the coast; and (5) encourage State and local cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses in the Coastal Zone.

The project includes the entire area within the City's limits, including the Coastal Zone, which is regulated by the California Coastal Commission (CCC) under the CCA. Pursuant to the CCA, the CCC has certified the City's LCP (see below for further details), giving the City the primary authority to regulate development and to issue Coastal Development Permits (CDPs) for projects requiring discretionary approval within its jurisdiction that are consistent with the LCP. While the City is the responsible agency with the authority to issue CDPs for projects located in the Coastal Zone, the CCC retains jurisdiction of those project activities occurring on tidelands and submerged lands. Implementation of the proposed project is considered a planning policy action and would not result in the physical development of any project that would require a CDP from either the City or the CCC.

4.4.5.3 Local and Regional Plans and Policies

The City is covered by several planning documents and programs that have varying degrees of regulation. The City has preeminent authority over deciding the land uses within the City. The adopted planning documents regulating land use are the City's General Plan, the Zoning Code, and various specific plans.

Applicable regional, local, and conservation land use policies and guidelines from each of these planning documents are described below. In addition, pursuant to *State CEQA Guidelines* Section 15125 (d), the proposed project's consistency with other applicable regional plans and programs, such as the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP), is addressed in the appropriate topical sections of this Recirculated Draft EIR. The following paragraphs explain the regulations, plans, and policies applicable to the proposed project.

Regional Transportation Plan/Sustainable Communities Strategy. The Southern California Association of Governments (SCAG) is a regional council consisting of the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and over 38,000 square miles within Southern California. SCAG is the Metropolitan Planning Organization (MPO) serving the region under federal law, and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law. As the Regional Transportation Planning Agency, SCAG prepares long-range transportation plans for the Southern California region, including the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the 2008 Regional Comprehensive Plan (RCP).

On April 7, 2016, SCAG adopted the 2016–2040 RTP/SCS. The 2016–2040 RTP/SCS is a long-range planning document that provides a common foundation for regional and local planning, policymaking, and infrastructure goals in the SCAG region. The overall vision for the 2016–2040 RTP/SCS is to allow for compact communities that are connected by numerous public transit options, are more walkable, and are safe for bicyclists. By promoting more compact communities and improving the regional transit system, SCAG's 2016–2040 RTP/SCS aims to reduce vehicular miles traveled and associated air quality and greenhouse gas emissions, promote active lifestyles, and fuel economic growth.

The 2016–2040 RTP/SCS establishes a number of initiatives aimed at improving the regional transit system and reducing automobile reliance in the SCAG planning area. Examples of these initiatives include promoting alternative modes of transportation and active transportation (e.g., bicycling and focusing new growth near transit and high-quality transit areas [HQTA] and Livable Corridors). HQTAs are defined as walkable transit villages or corridors within 0.5 mile of a well-serviced transit stop or transit corridor with a 15-minute or less service frequency during peak commuting hours. Approximately 62 percent of the City's land area is within an HQTA (refer to Figure 4.4.3 for a map of HQTAs within the City). Livable corridors are defined as arterials characterized by a mix of higher-density residential uses, employment centers, active transportation, and alternative transportation modes. In addition, the 2016–2040 RTP/SCS aims to provide sustainable transportation options or residents of the region through the creation of Neighborhood Mobility Areas (NMAs). NMAs promote active transportation and encourage biking, walking, skateboarding, neighborhood electric vehicles, and senior mobility devices in place of automobile use. Overall, the 2016–2040 RTP/SCS aims to focus new growth around transit.

Regional Comprehensive Plan. In 2008, SCAG adopted the Regional Comprehensive Plan (RCP) for the purpose of providing a comprehensive strategic plan for defining and solving housing, traffic, water, air quality, and other regional challenges. The 2008 RCP has two primary objectives in implementing this strategic plan: (1) integrating transportation, land use, and air quality planning approaches, and (2) outlining key roles for public and private sector stakeholders to implement reasonable policies regarding transportation, land use, and air quality approaches. While the 2008 RCP outlines several policies to inform local decision-makers within the SCAG region with respect to policy and planning decisions, these policies are considered recommendations and are not mandated by law.

With respect to land use policy, the 2008 RCP includes a Land Use and Housing chapter that aims to link land use and transportation planning decisions to the projected population and economic growth in the SCAG region. Specifically, the Land Use and Housing chapter of the 2008 RCP promotes sustainable planning for land use and housing in the SCAG region by maximizing the efficiency of the existing circulation network, providing a greater variety in housing types, promoting a diverse and growing economy, and protecting the existing natural environment. The 2008 RCP identifies 2% Strategy Areas as part of the Sustainability Planning Grant (formerly known as Compass Blueprint growth vision); however, these areas have since been updated and replaced by the HQTAs identified in the 2016–2040 RTP/SCS.

Los Angeles County Airport Land Use Plan. Consistent with requirements established by the Federal Aviation Administration (FAA), the County of Los Angeles adopted the Los Angeles County Airport Land Use Plan (ALUP) on December 19, 1991. The overall intent of this plan is to protect public health, safety, and welfare in the County of Los Angeles by ensuring the orderly expansion of airports and the adoption of land use patterns strategies that minimize the public's exposure to excessive noise and safety hazards around public use airports. The Los Angeles ALUP establishes regulations for over 10 airports in the region, including the Long Beach Airport.

The Long Beach Airport is centrally located within the planning area and is within the jurisdiction of the Los Angeles County Airport Land Use Commission (ALUC) and is subject to regulations established in the Los Angeles County ALUP.

The Los Angeles County ALUP outlines compatibility concerns related to noise and safety impacts to surrounding communities that could adversely affect the viability of the airport. Specifically, the Los Angeles County ALUP aims to protect the health, safety, and welfare of residents within the County through the establishment of Runway Protection Zones (easements for which land uses adjacent to the airport need to be controlled) and noise regulations (established in the Airport Noise Compatibility Ordinance).

Orange County Airport Environs Land Use Plan for the Joint Forces Training Base-Los Alamitos. The Los Alamitos Joint Forces Training Base (JFTB) is situated in the City of Los Alamitos and contains the Army Aviation Support Facility and the 1st Battalion of the 140th Aviation Regiment of the California Army National Guard. The facility has two runways that are aligned northeast to southwest.

The Los Alamitos JFTB is within the jurisdiction of the Orange County ALUC, which is required to prepare and adopt an airport environs land use plan (AELUP) for each of the airports within its

jurisdiction. As such, the Orange County AELUP for the Los Alamitos JFTB was adopted in 1975 and has since been revised numerous times, with the last revision occurring in 2016.

The Orange County AELUP for the Los Alamitos JFTB aims to safeguard the general welfare of residents within the vicinity of the airport and to ensure the continued operation of the airport. Specifically, the plan seeks to protect the public from adverse aircraft noise and safety impacts. The Orange County AELUP for the Los Alamitos JFTB aims to achieve these goals by regulating land use patterns within the "airport influence area." Specifically, airport influence areas are defined as areas where current or future airport-related noise, overflight, safety, and/or airspace protection may significantly impact land uses or necessitate land use restrictions. The southeastern boundary of the City of Long Beach is located within a portion of the Los Alamitos JFTB airport influence area, and as such, is subject to regulations outlined in the Orange County AELUP for the Los Alamitos JFTB.

4.4.5.4 City of Long Beach General Plan

The City's General Plan establishes goals, policies, and strategies that combine to serve as a "blueprint" directing future growth in the City. The current General Plan consists of the Historic Preservation, Open Space and Recreation, Housing, Air Quality, Mobility, Land Use, Seismic Safety, Noise, Public Safety, Conservation, Scenic Routes, and Mobility Elements. The Mobility Element (2013) is the most recent General Plan element to be adopted, as part of the City's larger effort to update older elements of its General Plan.

Land Use Element. The City originally adopted its existing General Plan LUE on July 1, 1989, and subsequently revised the LUE on March 1, 1990, and again in April 1997. This plan formulated the following broad-range goals guiding land use in the City: manage growth, encourage economic development, revitalize the Downtown area, allow for the construction of new housing, encourage the development of affordable housing, emphasize strong neighborhoods, maintain existing public facilities, and maintain and/or improve the circulation system.

The existing 1989 LUE includes a summary of land uses and contains a discussion of the intended and allowable uses within each land use type. Per the 1989 LUE, future development must be consistent with land uses established for each parcel of land and must also be consistent with applicable goals and policies established for the proposed land use type.

As part of the LUE, the City designated land uses in the City on a parcel-by-parcel basis using one of 13 land use districts established in the LUE. These land use districts include the following: (1) Single-Family District, (2) Mixed Style Homes District, (3A) Townhomes, (3B) Moderate Density Residential District, (4) High Density Residential District, (5) Urban High Density Residential District, (6) High-Rise Residential District, (7) Mixed Use District, (8) Major Commercial Corridor, (8A) Traditional Retail Strip Commercial, (8P) Pedestrian-Oriented Retail Strip, (8R) Mixed Retail-Residential Strip, (8M) Mixed Office/Residential Strip, (8N) Shopping Nodes, (9R) Restricted Industry, (9G) General Industry, (10) Institutional and School District, (11) Open Space and Park District, (12) Harbor/Airport District, and (13) Rights-of-Way.

In addition to the General Plan LUE, the City's Local Coastal Program regulates land use and development within the City's Coastal Zone, as discussed further below.

Scenic Routes Element. In 1975, the City adopted the Scenic Routes Element (SRE), which addresses selective and protective criteria and standards for the designation of scenic corridors within the City. The SRE also contains specific urban design criteria and standards that support the regulation of structures, signage, utility lines, landscaping, view corridors, street furniture, and other visual elements within scenic corridors. It is the overall intent of the SRE to enhance and protect the urban setting of the City through aesthetic improvements to scenic routes and corridors in the City.

In addition to updating and replacing the existing 1989 LUE with a new LUE, the project also proposes to replace the existing 1975 SRE with the proposed UDE. This element would establish iconic sites and viewsheds within the City and outline goals, policies, and implementation strategies aimed at guiding the aesthetic character of the City.

Local Coastal Program. The City of Long Beach became the first City in California to adopt a LCP when the CCC certified its LCP on July 22, 1980. The LCP is the primary planning tool used to guide land use and development within the City's Coastal Zone, which encompasses approximately 3,100 acres along the coastline (refer to Figure 4.4.4, Local Coastal Zone). Within the Coastal Zone, the City's LCP outlines goals and policies to protect and enhance coastal resources. Specifically, these goals and policies are aimed at maximizing public access to the coast, protecting low-cost housing and recreational facilities, and increasing recreational boating and other uses of coastal waters.

The LCP is distinct from the City's General Plan and Zoning Code as it establishes both land use and zoning regulations that support its implementation for new development within the Coastal Zone. Therefore, the City's General Plan must be consistent with the LCP. However, it is important to note that because the City's LCP was adopted 35 years ago, there have been several amendments to the LCP to ensure its consistency with the current Long Beach General Plan. Because the proposed project would facilitate land use changes within the Coastal Zone, further updates/amendments to the City's LCP would be required.

Specific Plans. In addition to the existing General Plan land use designations and zoning districts, the City has also adopted several Specific Plans that serve as the presiding regulatory documents guiding land use within specific areas of the City. These specific plans include the SEASP, the Downtown Plan, and the Midtown Specific Plan. While the proposed project would facilitate citywide land use changes, the project would allow for existing Specific Plans to continue regulating land use and planning within areas designated as such in the City.

SEASP. The Southeast Area Specific Plan (previously known as the Southeast Area Development and Improvement Plan) was adopted in 1977 and served as the first Planned Development District in the City. The original plan aimed at guiding land uses through a period of rapid growth in the City. Nearly 40 years after its original option, the City adopted a new plan (SEASP) to guide area growth through 2060.

The SEASP area encompasses approximately 1,500 acres and is comprised of several established neighborhoods and undeveloped wetlands. The purpose of SEASP is to provide a regulatory framework for the area that allows for customized land uses and development standards, expanded multi-modal transportation choices, and a plan for future development that is compatible with natural resources in the area.

Due to the site's location within the Coastal Zone, the City is also engaged in the process of amending the City's LCP to ensure consistency between SEASP Specific Plan and the LCP. This amendment is currently pending consideration by the California Coastal Commission. However, as discussed further in Section 4.4.7, the proposed project includes a more comprehensive update to the LCP, beginning approximately 24 months after adoption of the project.

Downtown Plan. The Downtown area is situated in the southern portion of the City in between the Port of Long Beach and Alamitos Beach. The City's Downtown Plan was adopted in 2012 as the result of a 6-year effort to update the previous Downtown Plan (PD-30). The Downtown Plan establishes zoning, development standards, and design guidelines for the Downtown area. Implementation of the Downtown Plan would allow for approximately 5,000 new residential units; 1.5 million square feet (sf) of new office, civic, cultural, and similar uses; 384,000 sf of new retail uses; 96,000 sf of restaurant uses; and 800 new hotel rooms over a 25-year timeline. Overall, the Downtown Plan is an area-wide plan adopted by the City to direct future development within the Downtown area of the City.

Midtown Specific Plan. The Midtown Specific Plan consists of a 369-acre corridor along Long Beach Boulevard generally bounded by Spring Street to the north, Atlantic Avenue to the east, Anaheim Street to the south, and Pacific Avenue to the west. The Midtown Specific Plan was adopted in June 2016 for the purpose of regulating land use within PD-29, which encompasses the following four development districts: Transit Node, Corridor, Medical, and Open Space. Each of these four districts has its own set of development standards and land use plans. The Midtown Specific Plan is intended to be more flexible than traditional zoning to encourage new investment and development along the corridor. Altogether, the Midtown Specific Plan allows for the development of 3,600 homes and 2.8 million sf and could support up to 15,000 jobs.

Port Master Plan. The Port Master Plan (PMP) is the principal planning and land use plan that identifies planning policies aimed at guiding the physical development of tide and submerged lands conveyed and granted in trust to the Port of Long Beach. The PMP is used as a reference indicating needed policy changes as a guide for policy decisions; as a basis for capital improvements programming and for rendering services; by other governmental agencies as necessary guidance leading to coordinated efforts; and to individuals as an accurate source of information, an indication of new opportunities for private action and investment, and a basis for protecting existing development. The PMP covers an area of approximately 2,700 acres of land and over 4,500 acres of water. The PMP divides the Port of Long Beach area into 11 distinct planning districts, each with its own allowable land and water uses. While the CCC first certified the PMP in 1978, the last update to the PMP occurred in 1990.

The City is currently in the process of a comprehensive update to the existing PMP. The PMP update will incorporate years of amendments, technological advances, and important factors such as climate change and energy resources that are consistent with Green Port Policy objectives. The PMP update

will also revise guidelines related to public access to the waterfront by reviewing the vision for development of future recreation areas and facilities.[1]

City of Long Beach Zoning Code. Zoning is the division of a city or county into districts and the application of development regulations specific to each district. The City of Long Beach Zoning Code, Title 21 of the Municipal Code, includes regulations concerning where and under what conditions a business may operate in the City. It also establishes zone-specific height limits, setback requirements, parking ratios, and other development standards, for residential and commercial sites.

The Zoning Code is a primary tool for implementing the City's General Plan. It is the intent of the City that the General Plan LUE and the Zoning Code are consistent to ensure that goals and policies outlined in the General Plan and development standards outlined in the Zoning Code are implemented in a manner that is identifiable with the City's overall vision for the City. As illustrated by Figure 4.4.5, Zoning Districts, the primary existing zoning districts in the City include residential, commercial, and industrial uses.

In addition to establishing zoning districts, the City's Zoning Code also defines 32 Planned Development Districts throughout the City (refer to Figure 4.4.6, Planned Development Districts). All of these Planned Development Districts are more comprehensive than traditional zoning districts and are intended to allow for increased flexibility for development within these areas.

The proposed project includes an update to the existing General Plan LUE and corresponding Land Use Map. As such, following approval of the proposed project, the City's existing Zoning Code and Zoning Map would also be updated to ensure consistency with the General Plan. While PlaceTypes included as part of the project would be inconsistent with some current zoning districts and regulations outlined in the City's existing Zoning Code and corresponding Zoning Map (refer to Figure 4.4.5), the project includes Project Design Feature (PDF) 4.4.1 to address such inconsistencies. Specifically, Project Design Feature PDF 4.4.1 requires the City to: (1) evaluate and map zoning inconsistencies and prioritize areas needing intervention within the first 12 months of project approval, (2) begin processing zone changes, zone text amendments, and LCP updates within the first 24 months of project approval, (3) begin drafting new zones or begin preparation of a comprehensive Zoning Code and LCP update to reflect the PlaceTypes adopted in the LUE within the first 36 months of project approval, and (4) complete the resolution of all zoning and LCP inconsistencies by the end of the fifth year following project approval.

4.4.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Thresholds of Significance.* Based on these thresholds, implementation of the proposed project would have a significant adverse impact related to land use and planning if it would:

[1] Port of Long Beach. Master Plan/Port Master Plan Update. Website: http://www.polb.com/facilities/master_plan/default.asp (accessed September 13, 2018).

Threshold 4.4.1: Physically divide an established community

Threshold 4.4.2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

The planning area is almost entirely developed and is currently characterized by a mix of residential, commercial, institutional, industrial, open space, religious, utility/right-of-way, and other land use designations. The area is primarily built out with a limited inventory of vacant and underutilized parcels. The proposed project would allow for strategic growth along transit corridors and within the City's Downtown area that would serve to preserve existing single-family neighborhoods, target new areas for infill development, and transform vacant and underutilized parcels.

As described further in Chapter 3.0, Project Description, the project is proposing to update and replace its existing General Plan LUE with a new LUE that would shape growth in the City through the horizon year 2040. As part of this update, the proposed LUE would adopt "PlaceTypes" in place of the existing parcel-by-parcel land use designations outlined in the 1989 LUE. The existing seven residential land use categories would be replaced by three new PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential-Low, and Multi-Family Residential-Moderate. The current Mixed Use Designation would be split into two new PlaceTypes: Neighborhood-Serving Center or Corridor and Transit-Oriented Development. The current six commercial land use designations would be replaced and would either be allowed under the aforementioned two mixed-use PlaceTypes or be allowed within the proposed Community Commercial PlaceType. The existing Restricted Industry and General Industry land use designations would be replaced with the Neo-Industrial and Industrial PlaceTypes, respectively. The Open Space/Parks and Right-of-Way land use designations would be replaced with the Open Space PlaceType. Similarly, the Harbor/Airport land use designation would be replaced with the Regional-Serving Facility PlaceType. The Institutional/Schools land use designation would be allowed within several of the aforementioned PlaceTypes, such as the Founding and Contemporary Neighborhood (Low and Moderate), Multi-Family Residential (Low and Moderate), and Regional-Serving PlaceTypes. The proposed LUE would also include the addition of the Downtown and Waterfront PlaceTypes. For further detail regarding the proposed PlaceTypes, refer to Chapter 3.0, Project Description, of this Recirculated Draft EIR and the proposed LUE included in Appendix H.

The proposed PlaceTypes would differ from the existing land use designations in that they would allow for greater land use flexibility focused on mixed-use development. The proposed PlaceTypes would be centered on permitted land uses and preferred development patterns, streetscapes, and urban form features. The proposed LUE would also regulate maximum development standards by establishing allowable densities within each PlaceType.

In addition to adopting PlaceTypes, the proposed project would focus on new development opportunities within the following eight Major Areas of Change:

1. **Create, restore, and preserve more open space.** The proposed project aims to preserve parks and open spaces within the north, central, and western portions of the planning area, with a priority on underserved areas.

2. **Convert targeted industrial edges and districts to Neo-Industrial uses.** The proposed project aims to establish transitions between older industrial areas and light industrial uses that would allow some live/work opportunities. Neo-industrial uses would also serve as a buffer between heavy industrial and residential uses in northern and western portions of the planning area.

3. **Promote regional-serving uses.** The proposed project aims to encourage future development adjacent to regional-serving uses in the City (e.g., the Long Beach Airport) in an effort to stimulate economic growth.

4. **Convert some industrial uses to commercial and regional-serving uses.** The proposed project aims to convert industrial uses to commercial uses in two areas of central Long Beach between Cherry Avenue and the Union Pacific Railroad.

5. **Create new transit-oriented development.** The proposed project aims to encourage transit ridership and walkability by allowing for development along the Metro Blue Line in the City.

6. **Continue Downtown development.** The proposed project aims to accommodate high-quality residential, entertainment, and commercial development within the Downtown area of the planning area.

7. **Promote infill and redevelopment to support transit.** The proposed project aims to promote infill development for appropriate nodes and corridors supported by transit throughout the City, including along Cherry Avenue, near the Traffic Circle, and along Pacific Coast Highway in order to revitalize existing underutilized parcels and shipping centers.

8. **Revitalize the Belmont Pier Complex and Alamitos Bay to highest and best use.** The proposed project aims to revitalize the Belmont Pier Complex and Alamitos Bay by creating a more pedestrian-friendly environment, improving coastal access, providing additional recreational and visitor-serving amenities, increasing parking availability, and allowing for new commercial development that is integrated with the existing coastal setting.

In total, the Major Areas of Change encompass approximately 13 percent of the planning area. Consistent with the goals outlined in the 2016–2040 RTP/SCS and the City's General Plan Mobility Element, the proposed project focuses on these areas specifically as they are uniquely situated to accommodate new development along transit corridors; infill development; and revitalization efforts. Because the proposed project would focus on development efforts within the Major Areas of Change, most of the planning area (87 percent) would be preserved in its existing land use type following project implementation. In addition, future development within these Major Areas of Change would not include the development of any major roadway corridors or obstructions that would physically divide any established communities. Therefore, the proposed project would result in less than significant impacts related to the potential physical division of an established community (Threshold 4.4.1).

For the reasons stated above, this threshold is not analyzed further in this Recirculated Draft EIR.

4.4.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures related to land use and planning. However, the project would incorporate Project Design Feature PDF 4.4.1 to reduce potential zoning inconsistencies.

PDF 4.4.1 To ensure that the proposed project complies with and would not conflict with or impede the City of Long Beach (City) Zoning Code, the project shall implement a Zone Change Program and Local Coastal Program (LCP) update to ensure that changes facilitated by the adopted Land Use Element (LUE) are consistent with the Zoning Code and LCP. The Zone Change Program and LCP update shall be implemented to the satisfaction of the City Director of Development Services, or designee, and shall include the following specific performance criteria to be implemented within 5 years from the date of project approval:

- **Year 1:** Within the first 12 months following project approval, all Land Use Element/Zoning Code/LCP inconsistencies shall be identified and mapped. The City shall evaluate these inconsistencies and prioritize areas needing intervention.
- Year 2: Following the identification and mapping of any zoning and LCP inconsistencies, the City shall, within 24 months following project approval, begin processing zone changes, zone text amendments, and LCP updates in batches, as required to ensure that the Zoning Code and LCP are consistent with the adopted LUE.
- Year 3: The City shall, within 36 months following project approval, begin drafting new zones, or begin preparation of a comprehensive Zoning Code and LCP update, to better reflect the PlaceTypes identified in the adopted LUE.
- Year 5: All zoning and LCP inconsistencies shall be resolved through mapping and text amendments by the end of the fifth year following project approval. The City shall also submit the updated LCP to the California Coastal Commission (CCC) for consideration and approval by the end of the fifth year following project approval.

4.4.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following proposed strategies, policies, and implementation measures contained in the proposed LUE and UDE are applicable to the analysis of Land Use and Planning and would replace existing goals, policies, and strategies outlined in the City's existing LUE and Scenic Routes Element (SRE) following project approval:

4.4.7.2 Land Use Element (2018)

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.
- **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-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 Policy 1-7:** Encourage neighborhood-serving retail, employment, and entertainment destinations in new mixed-use projects to create local, walkable daily trip destinations.
    - **LU-M-4:** Re-invent commercial corridors by creating compact, mixed-use land use patterns and making streets safer for pedestrians, bicyclists, and transit users.
- **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 4-2:** Promote the transition of some heavy industrial and manufacturing sites to creative green and sustainable industries.
- **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 6-9:** 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 6-2:** Convert outdated and underutilized manufacturing and industrial sites to Neo-Industrial uses, particularly those adjacent to residential areas.

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-M-7:** Continue to create and update master plans for large employment and higher education centers, including the Port of Long Beach Master Plan, the Golden Shore Master Plan, the California State University at Long Beach Campus Master Plan, the Long Beach City College 2020 Unified Master Plan, and the Long Beach Memorial Medical Center 2005 Master Plan of Land Uses.
- **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-M-6:** Continue to implement the Downtown Plan to promote the development of a compact downtown core.
- **LU Policy 7-8:** Ensure infill development is compatible with surrounding established and planned uses.
    - **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.

- **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-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.

    - **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.

- **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 8-2:** 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.

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-M-36:** Use the development review process to identify and remove impacts associated with new development projects on low-density residential uses.

- **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 10-2:** 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 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 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.

4.4.7.3 Urban Design Element (2018)

Strategy No. 1: Improve function and connectivity within neighborhoods and districts.

- **Policy UD 1-2:** Focus development and supporting infrastructure improvements within targeted Areas of Change identified within 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 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.

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 14-2:** 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 14-4:** 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.

Strategy No. 15: Consider vacant parcels as infill opportunities.

- **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.

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.

Strategy No. 19: Protect and enhance established Founding and Contemporary Neighborhood PlaceType.

- **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 multi-family buildings to allow for better integration.

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.

Strategy No. 21: Protect and enhance established Neighborhood-Serving Centers and Corridors-Low and Moderate PlaceType.

- **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.

Strategy No. 22: Protect and enhance established Transit-Oriented Development–Low and Moderate PlaceType.

- **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 22-3:** 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.

Strategy No. 23: Protect and enhance established Community Commercial PlaceType.

- **Policy UD 23-2:** Develop single-family attached units or multi-family residential uses as a transition in scale between the automobile-oriented corridor and the adjacent neighborhood.

Strategy No. 24: Protect and enhance established Industrial PlaceTypes.

- **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 24-7:** 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.

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 25-4:** Encourage development intensity that is graduated, from lower intensity near residential neighbors, to moderate intensity near wholly industrial uses.

- **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.

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.

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.

Strategy No. 28: Protect and enhance established Waterfront PlaceType**.**

- **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.

4.4.8 Project Impacts

Threshold 4.4.2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. Several regionally and locally adopted land use plans, policies, and regulations would be applicable to development under the proposed project, including the CCA and the City-certified Local Coastal Program, the SCAG 2008 Regional Comprehensive Plan, the SCAG 2016–2040 RTP/SCS, the Los Angeles County ALUP and the Orange County AELUP for the Los Alamitos JFTB, the City of Long Beach General Plan, the City of Long Beach Municipal Code, and applicable Specific Plans. Consistency of the proposed project with the 2016 Air Quality Management Plan and the 2017 Orange County Transportation Authority (OCTA) Congestion Management Program are discussed in Section 4.2, Air Quality, and Section 4.8, Transportation/ Traffic, respectively, of this Recirculated Draft EIR.

California Coastal Act. As previously identified, the southern area of the City is located within the Coastal Zone, which is regulated by the CCC under the CCA. While the proposed project would not include any physical improvements within the Coastal Zone that would require CDPs from the CCC, the proposed project would require an update to the City's existing LCP that would require approval from the CCC.

As proposed as part of the project, the City would update its General Plan LUE and associated Land Use Map with the proposed PlaceTypes Map, which would include changes to areas within the Coastal Zone (refer to Figure 4.4.4). As illustrated in Figure 3.3, Proposed PlaceTypes, the proposed LUE would allow for the Open Space, Multi-Family Residential-Low, Contemporary and Founding Neighborhoods, and Neighborhood-Serving Center or Corridor-Low PlaceTypes within the Coastal Zone (refer to Chapter 3.0, Project Description, for figures). The establishment of these PlaceTypes within the Coastal Zone would allow for existing neighborhoods and open space areas to largely remain in their existing condition while also allowing for low-density residential and commercial development to accommodate the City's projected growth in population.

While the proposed LUE would include updates to existing land uses in this area by redesignating several areas within the Coastal Zone, the primary changes within the Coastal Zone would occur within the proposed Waterfront PlaceType. The Waterfront PlaceType encompasses the Downtown South Shore, Alamitos Beach, Belmont Pool and Pier, and the Alamitos Bay Marina areas. This PlaceType would aim to provide an increase of mixed uses and greater building intensities near the proposed Downtown area and lower-density uses adjacent to the shoreline and on the City's periphery.

While the Waterfront PlaceType would allow for existing development standards for the South Shore, Downtown, and Alamitos Beach areas to regulate land use within these areas, the LUE proposes changes primarily within the Belmont Pier area and the Alamitos Bay Marina areas. As part of the proposed project, allowable land uses within the Belmont Pier area would be updated to allow for additional visitor-serving uses and improved recreational opportunities for residents and visitors to the area. In addition, the proposed project would encourage improvements to the pedestrian and bicycle circulation network within the Alamitos Bay Marina, protect and enhance natural resources, promote pedestrian- and bicycle-oriented development, promote clear signage, and encourage wetlands restoration within the Coastal Zone.

According to the CCA, Chapter 3 of the CCA is to be utilized by the CCC when reviewing coastal development permits and LCPs. As such, a consistency analysis with applicable standards and policies included in Chapter 3 of the CCA has been provided to demonstrate the project's consistency with Chapter 3 of the CCA; refer to Table A in Appendix C (Land Use Consistency Analysis) of this Recirculated Draft EIR. As described in detail throughout Table A and summarized below, the proposed project would be consistent with applicable goals and policies outlined in the CCA.

In accordance with Chapter 3 of the CCA, 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 LUE aims to protect and preserve water bodies, and LU Policies 19-1 through LU 19-5 aim to protect and preserve marine resources and the coastal environment. In the UDE, Policy UD 17-3 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. 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. Policy UD 28-2 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 pedestrian and bicycle pathways and the construction

of new pedestrian and bicycle pathways to the coast through Policy UD 28-1. Further, 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). For the reasons stated above, the proposed project would be consistent with applicable goals and policies outlined in the CCA.

Local Coastal Program Consistency. The City's LCP outlines provisions related to the following general policies: Transportation and Access; General Housing Policy; Park Dedication Policy; and Strand Use and Access. The proposed project would be consistent with applicable provisions of the LCP related to Transportation and Access because the contemplated land uses and design 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). The proposed project would be consistent with the LCP's General Housing Policy provisions due to included 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; and Implementation Strategies LU-M-3, 27, and 48, as well as UDE Policy 16-1). City parks and open space have been dedicated and are reflected on the PlaceType and Open Space Maps in the LUE and UDE, ensuring project compliance with the LCP's Park Dedication Policy provisions. Additionally, 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). The proposed project would be consistent with applicable provisions of the LCP related to Strand Use and Access because the project would promote use of the coastal resources by residents and visitors alike and promote improvements to existing and future pedestrian and bicycle pathways, 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 the general policies discussed above.

The proposed LUE would re-designate land uses within the City's Coastal Zone with the proposed Downtown, Waterfront, Neighborhood-Serving Center or Corridor (Low and Moderate), Open Space, Founding and Contemporary Neighborhood, and Multi-Family Residential-Moderate PlaceTypes. While the proposed LUE would allow for a variety of PlaceTypes within the City's Coastal Zone, the Belmont Pier area and the Alamitos Bay Marina areas are the two primary areas targeted for change, including redevelopment activities and improved bicycle and pedestrian circulation.

Because the proposed project would result in updates to the City's General Plan that would be inconsistent with portions of the City's existing LCP, project implementation could result in potential land use conflicts with the LCP. Therefore, updates/amendments to the City's LCP could be required at the time individual applications for development within the City's Coastal Zone are proposed, if they were determined by the City to be inconsistent with the adopted General Plan LUE. Additionally, as the City updates zoning in each specific area as part of the comprehensive zoning update outlined in Project Design Feature PDF 4.4.1, the City will also update the LCP and submit it to the CCC for review and approval. Therefore, approval of these future LCP updates and future LCP amendments would reduce potential inconsistencies with the City's LCP to a less than significant level.

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 further refined at the time individual applications for development within the City's Coastal Zone are proposed. Refer to Figure 4.4.7 for a map of vegetated habitat areas, including ESHAs, within the SEASP area. See further details in Appendix C (Land Use Consistency Analysis) of this Recirculated Draft EIR.

While the LUE would update existing land use designations within the City, including areas within the Coastal Zone, the proposed UDE would not result in any changes to land use designations, but would establish goals, policies, and implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. Therefore, following approval of the proposed UDE, no inconsistency with the City's General Plan would occur, and impacts would be considered less than significant.

For these reasons cited above, the proposed project would be consistent with the applicable goals and policies outlined in the City's LCP. Impacts would be considered less than significant, and no mitigation would be required. For further discussion related to the proposed project's consistency with the City's LCP, please refer to Table A in Appendix C (Land Use Consistency Analysis) of this Recirculated Draft EIR.

SCAG 2008 RCP. The 2008 Regional Comprehensive Plan (RCP) addresses regional goals related to growth and infrastructure in the Southern California region. The RCP also addresses issues such as housing, traffic, air quality, and water resources as a guide for local agencies to use in preparing plans that deal with regional issues. The RCP outlines a vision of how the Southern California region can balance growth with conservation in order to achieve a higher quality of life. In order to achieve this balance the RCP aims to establishes the following land use and housing goals: (1) focus growth in existing centers and along major transportation corridors, (2) encourage mixed-use development, (3) provide new housing opportunities, (4) encourage development near existing and planned transportation stations to reduce traffic congestion and associated air pollutants, (5) preserve existing single-family neighborhoods, and (6) protect open space and environmentally sensitive habitat areas from development.

The proposed project would encourage new development and infrastructure projects that would emphasize land use and mobility connectivity and would encourage new housing and employment options.

The provision of new housing and employment options under the proposed project would be accomplished through the by adoption of PlaceTypes, which would emphasize flexible land use patterns and would allow for a mix of compatible uses in areas throughout the City. For example, the proposed project would allow for the establishment of the Transit-Oriented Development PlaceType, which would encourage mixed-use development that would transition from lower density single-family neighborhoods to higher-density housing. The Transit-Oriented Development PlaceType would be encouraged in areas along the Metro Blue Line (i.e., Long Beach Boulevard); in the Downtown area; and along existing and future bus, shuttle, and other mass transit routes and stations. Therefore, the proposed project would be consistent with the 2008 RCP's goals to focus growth near major transportation corridors and transportation stations and to encourage mixed-use development.

As described further in Section 4.6, Population and Housing, the proposed project would accommodate up to 28,532 new residential households in the planning area. Specifically, residential uses would be allowed within the Founding and Contemporary Neighborhood, Multi-Family, Neighborhood-Serving Centers and Corridors, Transit-Oriented Development, Downtown, and Waterfront PlaceTypes. Therefore, the proposed project would be consistent with the 2008 RCP's goals to provide additional housing opportunities.

Although the proposed project would allow for mixed-uses and higher density development within several of the proposed PlaceTypes, the project also encourages the protection of existing residential communities and open space/environmentally sensitive areas from new development. Specifically, the proposed project would establish the Founding Neighborhood PlaceType, which is intended to preserve the City's lower-density residential neighborhoods from higher-density uses proposed elsewhere in the City. The project would also establish the Open Space PlaceType, which is intended to protect existing open space uses and environmentally sensitive areas (e.g., wetland areas), as well as promote the creation of new parks and open space areas throughout the City. Therefore, the proposed project would be consistent with the 2008 RCP's goals to preserve existing single-family neighborhoods and protect open space and environmentally sensitive habitat areas from development.

While the LUE would update existing land use designations within the City, the proposed UDE would not result in any changes to land use designations, but would establish goals, policies, and implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. As such, the proposed UDE would not result in conflicts with the 2008 RCP.

For further discussion related to the proposed project's consistency with the 2008 RCP, please refer to Table B in Appendix C (Land Use Consistency Analysis) of this Recirculated Draft EIR. For the reasons stated above, the proposed project would be consistent with applicable goals outlined in the 2008 RCP. Impacts would be considered less than significant, and no mitigation would be required.

SCAG RTP/SCS Consistency. For the City and much of the Southern California region, SCAG is the Metropolitan Planning Organization (MPO) that prepares demographic projections. These demographic projections are included in the RTP/SCS. For the 2016–2040 RTP/SCS, SCAG forecasts population growth of 18,320 new residents, employment growth of 28,511 new jobs, and 11,700 housing units in the City by the year 2040. The proposed LUE is consistent with the 2040 population and housing projections outlined in the 2016–2040 RTP/SCS, and also incorporates the same horizon year (2040) as the RTP/SCS.[2]

[2] The number of housing units included as part of the project is greater than what is projected for the City in the 2016–2040 RTP/SCS, as the number of needed housing units is based on the projected future growth in the number of households in the City (based on RTP/SCS projections) combined with the number of new housing units needed to address overcrowding of existing households in the City (as documented through the Assessment of Fair Housing). In total, 28,524 housing units are required to ensure consistency with these projections and housing mandates.

In addition to preparing demographic projections for the region, the 2016–2040 RTP/SCS also 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.

The proposed project would establish the Transit-Oriented Development-Low and Moderate PlaceTypes that would promote mixed-use development along Long Beach Boulevard, adjacent to stations along the Metro Blue Line route. The proposed project would also allow for mixed-use development in most of the proposed PlaceTypes and would focus on creating walkable, pedestrian-friendly neighborhoods that would reduce automobile dependence and improve the transportation network (refer to LUE Goals Nos. 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). Active transportation is an area of focus in the RTP/SCS, as well as the City's General Plan Mobility Element (2013). Therefore, the proposed project would be consistent with the RTP/SCS and the Mobility Element goal to protect the environment and health of its residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking) through mixed-use development along the Metro Blue Line route.

The proposed project would also promote a variety of housing types by allowing for varying building densities within the proposed PlaceTypes. For example, the Founding and Contemporary Neighborhood PlaceType would allow for single-family, low-density housing, and the Multi-Family Low-and Moderate PlaceTypes would allow for duplex, triplex, apartment, and condominium units (refer to LUE Goals 4 and 6; Policy 16-5; and Implementation Strategies LU-M-3, 27, 47, and UDE Policy 16-1). Therefore, the proposed project would be consistent with the RTP/SCS's goals of providing new housing opportunities.

In addition, the proposed project would promote a diverse economy by allowing for a variety of businesses, such as start-up businesses within the Neo-Industrial PlaceType (refer to LUE Goals No. 3, 7, and 8, as well as UDE Policy 6-3), and would preserve the existing natural environment through the establishment of the Open Space PlaceType (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). The proposed project would also establish the Regional-Serving Facilities PlaceType, which would allow for the continued operation of existing regional-serving facilities in the City, such as the Port of Long Beach, California State University Long Beach, and the Long Beach Airport (refer to LUE Major Area of Change No. 3, Goal No. 7, Strategy No. 17, and LU Policy 17-2). Therefore, the proposed project would be consistent with the RCP's economy goal of enabling business to be profitable and competitive locally, regionally, nationally, and internationally.

While the LUE would update existing land use designations within the City, the proposed UDE would not result in any changes to land use designations, but would establish goals, policies, and

implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. As such, the proposed UDE would not result in conflicts with the 2016–2040 RTP/SCS.

For further discussion related to the proposed project's consistency with the 2016–2040 RTP, please refer to Table B in Appendix C (Land Use Consistency Analysis) of this Recirculated Draft EIR. For these reasons cited above, the proposed project would be consistent with the 2016–2040 RTP. Impacts would be considered less than significant, and no mitigation would be required.

General Plan, Specific Plan, PMP, and ALUP Consistency. The proposed project is requesting to update and replace the existing LUE with an updated LUE and to replace the existing SRE with the proposed UDE. Approval of the proposed project would ensure that the proposed LUE would serve as the guiding land use policy document for future development in the City.

The proposed project would be consistent with California Government Code Section 65302 as it addresses one of the seven required elements (Land Use) and proposes to adopt an additional optional element (Urban Design) in the City's General Plan. The project would revise and replace the General Plan Land Use Map with the proposed PlaceTypes map. The proposed LUE and UDE, together with the other General Plan Elements, would serve to guide the overall physical development and urban form of the entire City through the horizon year 2040.

The proposed project includes a description of the existing land use setting and urban character of the City; outlines goals, policies, and implementation strategies specific to each PlaceType, and includes a number of diagrams and maps illustrating proposed land use patterns and development standards intended for each PlaceType. The adoption of PlaceTypes in place of land use designations is intended to preserve and ensure land use compatibility throughout the City. Specifically, the goals and policies in the LUE and UDE are intended to preserve existing neighborhoods, accommodate growth and promote mixed-use development in higher-density areas, preserve open space, and promote alternative modes of transportation to reduce automobile reliance throughout the City. These goals and policies, along with the flexibility in land use patterns afforded by the proposed PlaceTypes, would reduce potential conflicts related to incompatible uses, traffic, and noise, and would promote growth in urbanized areas to accommodate future projections in housing, population, and employment in the City.

The City's General Plan LUE and UDE also contain goals and policies aimed at regulating land use and development patterns in the City. These goals and policies would be updated and replaced by the goals, strategies, policies, and implementation strategies outlined in the proposed LUE. Similarly, goals and policies in the SRE would be replaced with goals, strategies, policies, and implementation strategies outlined in the proposed UDE. As described in detail throughout Table C in Appendix C of this Recirculated Draft EIR and summarized below, these goals, strategies, policies, and implementation strategies would be internally consistent between the proposed LUE and UDE, as well as consistent with existing elements of the City's General Plan (including the recently adopted Mobility Element).

Historic Preservation Element (2010). The proposed project would focus areas of change and growth outside of established historic districts in the planning area. Further, 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 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). The City's existing preservation program would also 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, and Implementation Strategy LU-M-39, as well as Policy UD 12-2). Therefore, the proposed project would be consistent with the overall intent of the City's General Plan Historic Preservation Element.

Open Space and Recreation Element (2002). 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 intent of the City's General Plan Open Space and Recreation Element.

Housing Element (2014). The proposed project would facilitate 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, and UDE Policy 16-1). In addition, 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 multi-family areas such as Alamitos Beach, within regional opportunity sites, such as PD-1 (Southeast Long Beach), and near the traffic circle (refer to LUE Goals 1–5, as well as UDE Strategies 3, 16, and 20–22).

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. As discussed in Chapter 3.0, Project Description, 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. The proposed project includes provisions for creation of additional housing units as necessary to fulfill the City's responsibilities under its RHNA and Housing Element (refer to Goals 4 and 6; and Implementation Strategies LU-M- 3, 27, and 48, as well as UDE Policy 16-1). Therefore, the proposed project would be consistent with the overall intent of the City's General Plan Housing Element.

Air Quality Element (1996). The LUE implementation program includes creation of a Climate Action and Adaptation Plan (CAAP) in the immediate short term, which is already underway and 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). Once completed, this CAAP would replace the City's 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 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. Goal No. 1 in the LUE aims to implement sustainable planning and development practices. 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). Land Use policies related to climate change and sustainability are summarized in the appendix, Chapter 7, of the LUE. The LUE and UDE address sustainability throughout each element and are consistent with the overall intent of the Air Quality Element. In addition, the creation of the CAAP would further the intent of the existing Air Quality Element.

Mobility Element (2013). The proposed project would further the goals of the City's General Plan Mobility Element by concentrating new development in the Downtown area and along bus and rail corridors. The project also includes design provisions to encourage biking, walking, and transit use. In addition, the proposed project utilizes the network established in the Mobility Element and distributes land uses by PlaceType around the City. The proposed project focuses on walkable corridors of mixed-use activity, but also encourages economic development anchored by regional facilities such as the Port, the Long Beach Airport, and other significant regional facilities such as California State University, Long Beach (CSULB). 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 the overall intent of the City's General Plan Mobility Element.

Seismic Safety Element (1988). 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.

Noise Element (1975). 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 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, and 38-4). Additionally, the City is currently updating the Noise Element as part of its overall General Plan update process. Therefore, the proposed project would be consistent with the overall intent of both the existing and future Noise Elements.

Public Safety Element (1975). The proposed project includes provisions for safety, as well as design features to improve safety through new development and through improvements to existing neighborhoods (refer to LUE Goal 4 and UDE Strategy 7). The LUE is implemented through the Zoning Code, including Crime Prevention through Environmental Design (CPTED) 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). 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 overall intent of the Public Safety Element.

Conservation Element (1973). The Conservation Element assures that natural resources, including mineral resources are considered in land use planning. 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). In addition, the proposed project places a particular emphasis on disadvantaged communities and identifies ways to lessen land use conflicts including through the reduction of environmental hazards (refer to LUE Goal 6 and UDE Strategy 13). Overall, 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 the overall intent of the Conservation Element.

For further detailed discussion related to the proposed project's consistency with adopted elements of the City's General Plan, refer to Table C in Appendix C of this Recirculated Draft EIR.

Although the proposed PlaceTypes are currently inconsistent with the existing General Plan land use designations, approval of the proposed project would result in the project being consistent with the General Plan and would ensure the proposed LUE would be the presiding policy document guiding land use in the City. Therefore, no inconsistency with the City's General Plan would occur following project approval.

While the LUE would update existing land use designations within the City, the proposed UDE would not result in any changes to land use designations, but would establish goals, policies, and implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. Furthermore, the proposed UDE would replace the

City's existing SRE. Therefore, project approval would resolve any current inconsistencies between the proposed project and the SRE.

For all of the reasons cited above and as detailed in Table C of Appendix C of this Recirculated Draft EIR, the proposed project would be consistent with the applicable goals and policies outlined in the City's General Plan. Impacts would be considered less than significant, and no mitigation would be required.

Adopted Land Use Plans. The proposed PlaceTypes would be consistent with adopted land use plans currently regulating development in the City. For example, the land use plan (e.g., the PlaceTypes Map) incorporates SEASP into the Regional-Serving Facility and Open Space PlaceTypes, the Downtown Plan into the Downtown PlaceType, and the Midtown Specific Plan in the Transit-Oriented Development PlaceType. The proposed project also incorporates the PMP into the Regional-Servicing Facility PlaceType. Similarly, the proposed project would allow for development within adopted airport land use plans to continue to be regulated by such plans so as to protect and maintain the public health, safety, and welfare within airport influence areas. As such, the proposed project would allow for these plans to continue regulating development within the adopted specific plan, the PMP, and airport land use plan areas. The proposed project would therefore be consistent with adopted land use plans. Impacts would be considered less than significant, and no mitigation would be required.

City Zoning Code Consistency. The proposed LUE would allow for increased densities, intensities, and heights throughout the City as compared to the existing General Plan and Zoning Code. The proposed UDE would also establish goals, policies, and implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. However, the allowable increase in future densities, heights, and intensities envisioned under the proposed project would be concentrated within the Downtown, Regional Serving Facilities (i.e., Douglas Park and the Port of Long Beach), and the Transit-Oriented Development (Low and Moderate) PlaceTypes, as well as along major corridors and thoroughfares throughout the City. While PlaceTypes included as part of the project and policies aimed at guiding the urban character of the City would be inconsistent with some current zoning districts and regulations outlined in the City's existing Zoning Code and corresponding Zoning Map (refer to Figure 4.4.4), the project includes Project Design Feature PDF 4.4.1 to address such inconsistencies. Specifically, Project Design Feature PDF 4.4.1 requires the City to: (1) evaluate and map zoning and LCP inconsistencies and prioritize areas needing intervention within the first 12 months of project approval, (2) begin processing zone change, zone text, and LCP amendments within the first 24 months of project approval, (3) begin drafting new zones or begin preparation of a comprehensive Zoning Code and LCP update to reflect the PlaceTypes adopted in the LUE within the first 36 months of project approval, and (4) complete the resolution of all zoning and LCP inconsistencies by the end of the fifth year following approval of the proposed LUE and UDE. Therefore, with incorporation of Project Design Feature PDF 4.4.1, the proposed project would be consistent with the City's Zoning Code and Zoning Map.

4.4.9 Mitigation Measures

The proposed project would not result in any significant adverse impacts related to land use and planning, and no mitigation would be required.

4.4.10 Cumulative Impacts

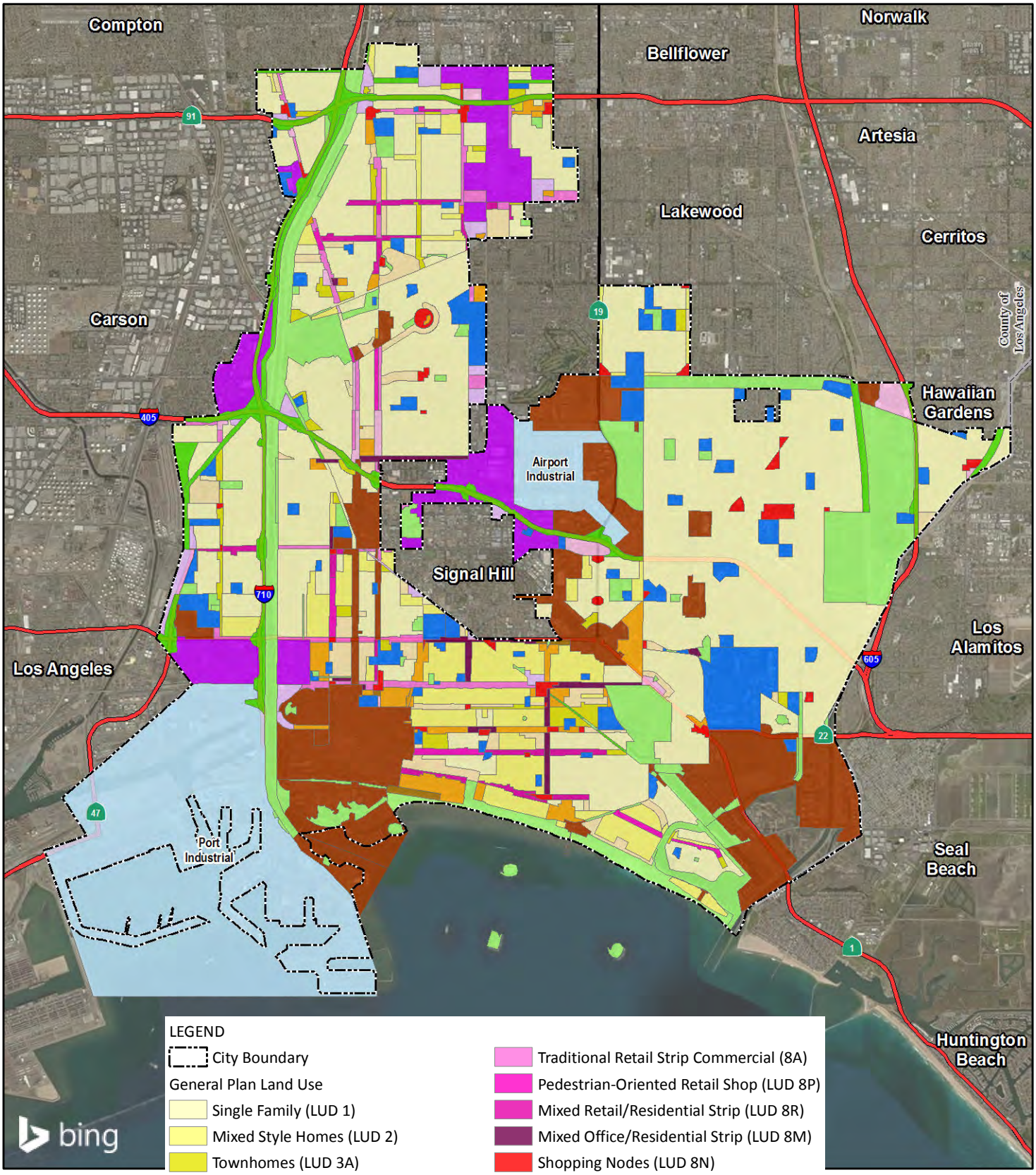
As defined in Section 15130 of the *State CEQA Guidelines,* cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for land use. The cumulative impact area for land use for the proposed project is the City of Long Beach, assuming the fully anticipated General Plan buildout scenario. Given that the proposed project encompasses a comprehensive update to the City's existing General Plan LUE and the adoption of a new UDE, the project itself is cumulative in nature, which would shape growth in the City through the horizon year 2040. As such, each new development project facilitated by project approval and subject to discretionary review would be subject to its own General Plan consistency analysis and would be reviewed for consistency with adopted land use plans and policies. For this reason, cumulative impacts associated with inconsistency of future development with adopted plans and policies would be less than significant.

The planning area is almost entirely developed with a wide variety of established land uses. The existing land use patterns within the City have been established with a variety of residential, commercial, office, industrial, and open space/recreational use, which are generally consistent with the City's General Plan Land Use Map and Zoning Map. Because the planning area is highly developed, it is anticipated that future growth would primarily result in infill development and redevelopment. Changes to the existing area would occur through the conversion of vacant or underutilized land. However, future development would be required to be consistent with applicable land use plans and policies, as well as zoning requirements. Therefore, cumulative land use impacts associated with incompatibilities between existing and future development would be less than significant.

Implementation of the proposed project would not conflict with applicable land use documents. The project would also address potential inconsistencies with the City's Zoning Ordinance and Zoning Map within the first 5 years following project approval (as outlined in Project Design Feature PDF 4.4.1), which would reduce cumulative project impacts related to potential zoning inconsistencies to a less than significant level. Therefore, land use impacts associated with the proposed project would be considered less than cumulatively significant, and no mitigation would be required.

4.4.11 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts of the proposed project related to land use and planning. No mitigation would be required.



LEGEND

City Boundary

General Plan Land Use

- Single Family (LUD 1)
- Mixed Style Homes (LUD 2)
- Townhomes (LUD 3A)
- Moderate Density Residential (3B)
- High Density Residential (LUD 4)
- Urban High Density Residential (LUD 5)
- High Rise Residential (LUD 6)
- Mixed Uses (LUD 7)
- Major Commercial Corridor (LUD 8)
- Traditional Retail Strip Commercial (8A)
- Pedestrian-Oriented Retail Shop (LUD 8P)
- Mixed Retail/Residential Strip (LUD 8R)
- Mixed Office/Residential Strip (LUD 8M)
- Shopping Nodes (LUD 8N)
- Restricted Industry (LUD 9R)
- General Industry (LUD 9G)
- Institutions/Schools (LUD 10)
- Open Space/Parks (LUD 11)
- Harbor/Airport (LUD 12)
- Right-of-Way (LUD 13)

LSA

FIGURE 4.4.1

N

0 0.75 1.5
MILES

Long Beach General Plan
Land Use and Urban Design Elements

Existing General Plan (1989) Land Use Map

SOURCE: Bing Maps (2018); City of Long Beach (1989)

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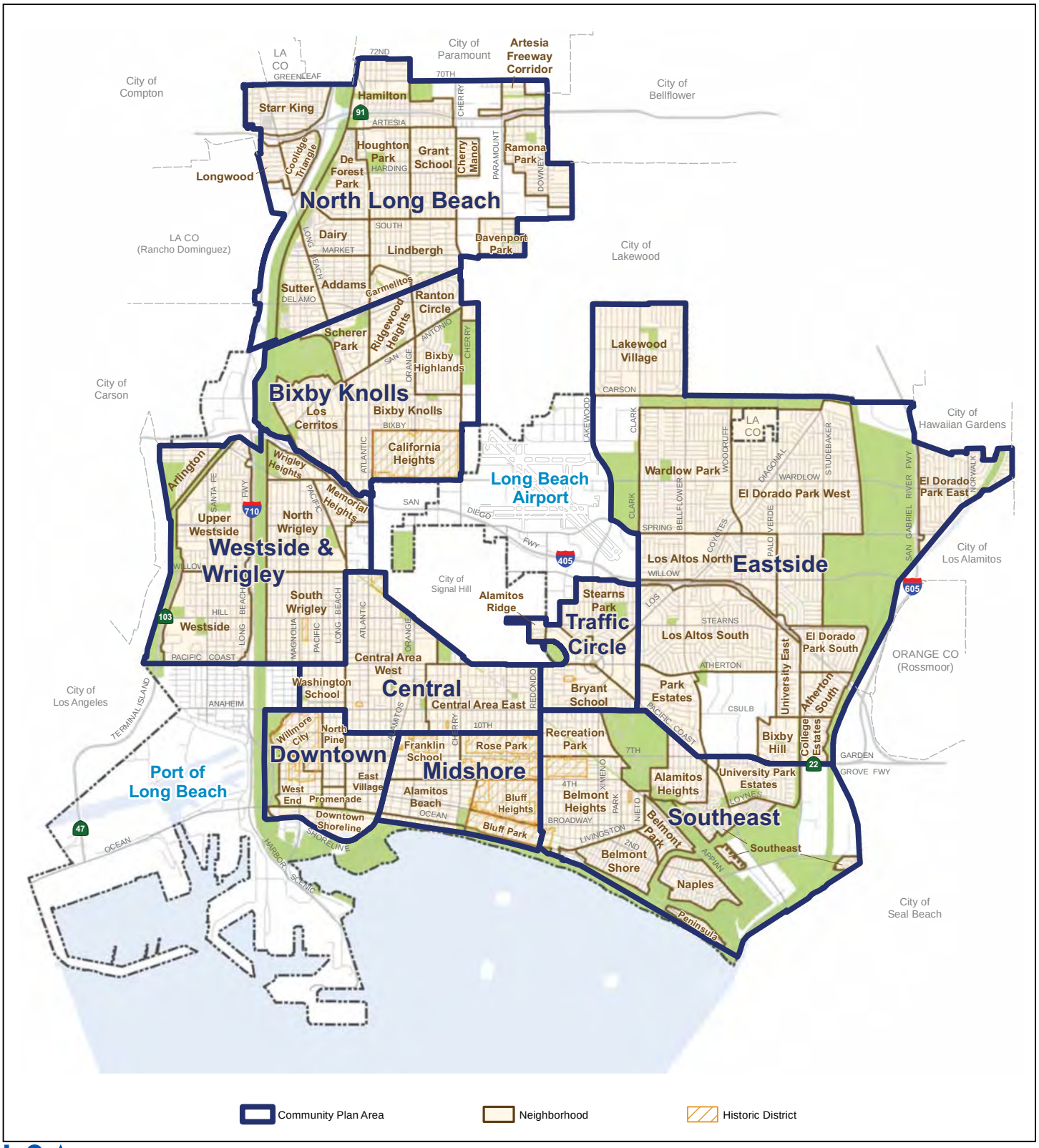

LSA

FIGURE 4.4.2

N

0 0.75 1.5
MILES

SOURCE: Proposed Land Use Element, City of Long Beach, August 2016

General Plan Land Use and Urban Design Elements

Community Plan Areas

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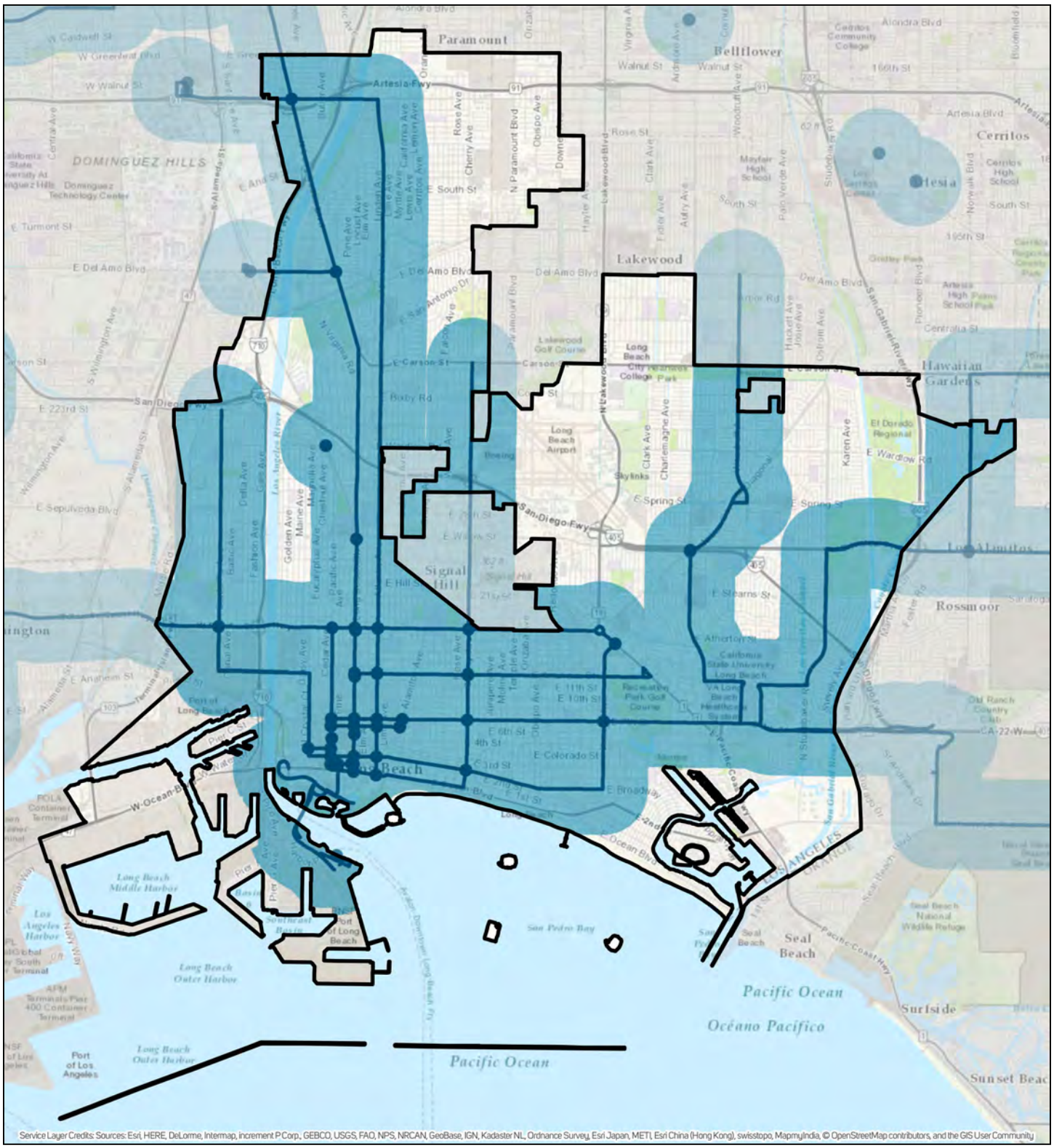

LSA

FIGURE 4.4.3

- Major Transit Stops
- High Quality Transit Corridors (HQTCs)
- High Quality Transit Areas (HQTAs)

N

0 0.75 1.5
MILES

SOURCE: SCAG, 2017

General Plan Land Use and Urban Design Elements
SCAG High Quality Transit Areas

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LSA

FIGURE 4.4.4

N

0 2000 4000
FEET

SOURCE: Proposed Land Use Element, City of Long Beach, August 2016

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General Plan Land Use and Urban Design Elements

Local Coastal Zone

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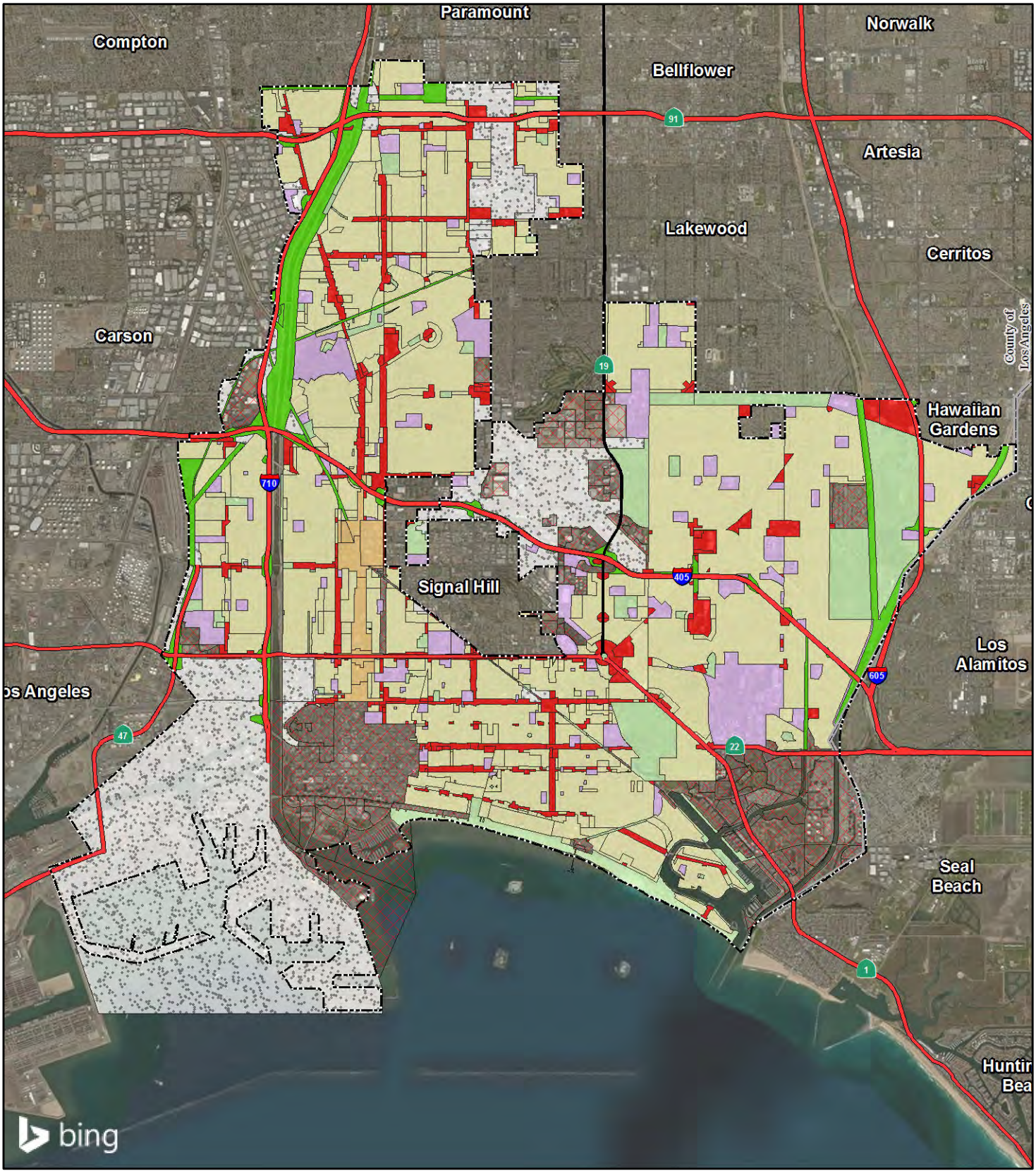

LSA

LEGEND

City Boundary

Zoning

Specific Plan

Residential

Commercial

Industrial

Institutional

Park

Public Right-of-Way

Planned Development

N

0 0.75 1.5
MILES

FIGURE 4.4.5

Long Beach General Plan
Land Use and Urban Design Elements

Zoning Districts

SOURCE: Bing Maps (2014); City of Long Beach (2018)

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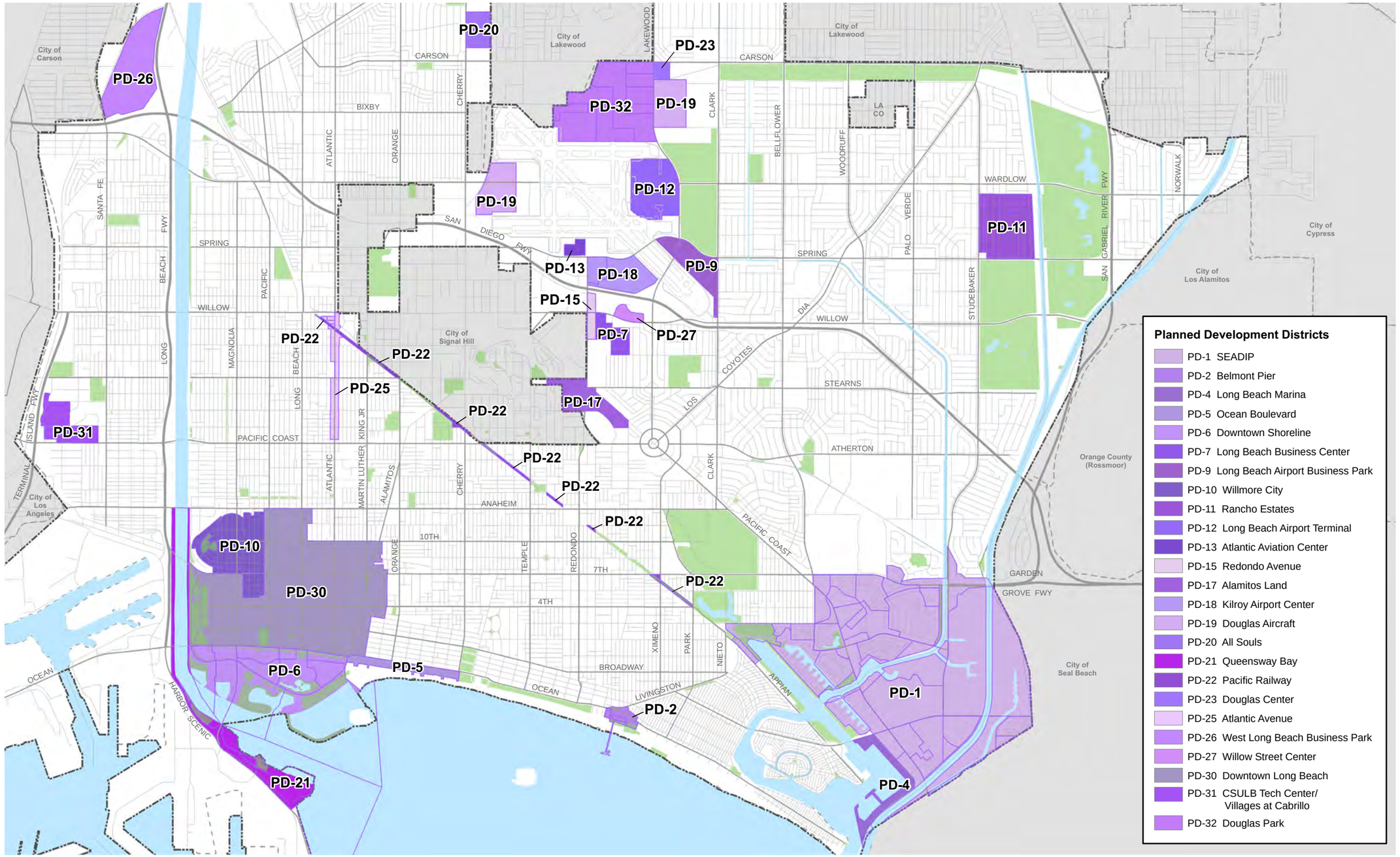

LSA

FIGURE 4.4.6

0 .5 1
MILES

SOURCE: Proposed Land Use Element, City of Long Beach, 2016

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General Plan Land Use and Urban Design Elements

Planned Development Districts

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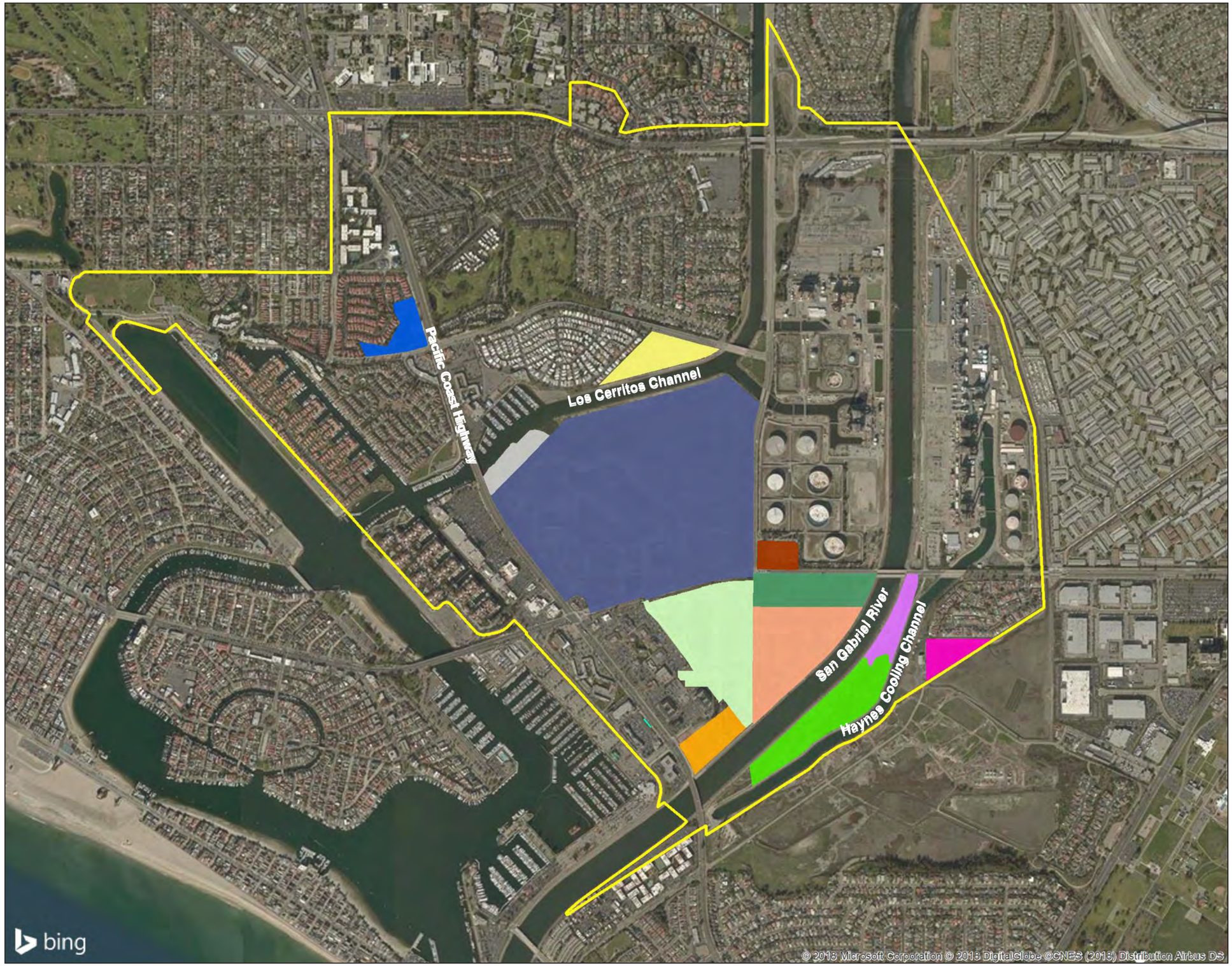

SEASP Property Boundary
Eastern Bryant Parcel
Western Bryant Parcel
City of Long Beach Property Site
Eastern LCWA Parcel
LCWA/Synergy Site
Western LCWA Parcel
Los Alamitos Retarding Basin
Loynes Property
Pumpkin Patch Site
Sim's Pond Biological Reserve
Subarea 11
Synergy Oil Fields
Whole Foods Parking Lot Swale

N

0 600 1,200 2,400
Feet

LSA

FIGURE 4.4.7a

General Plan Land Use and Urban Design Elements
Southeast Area Specific Plan
Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates
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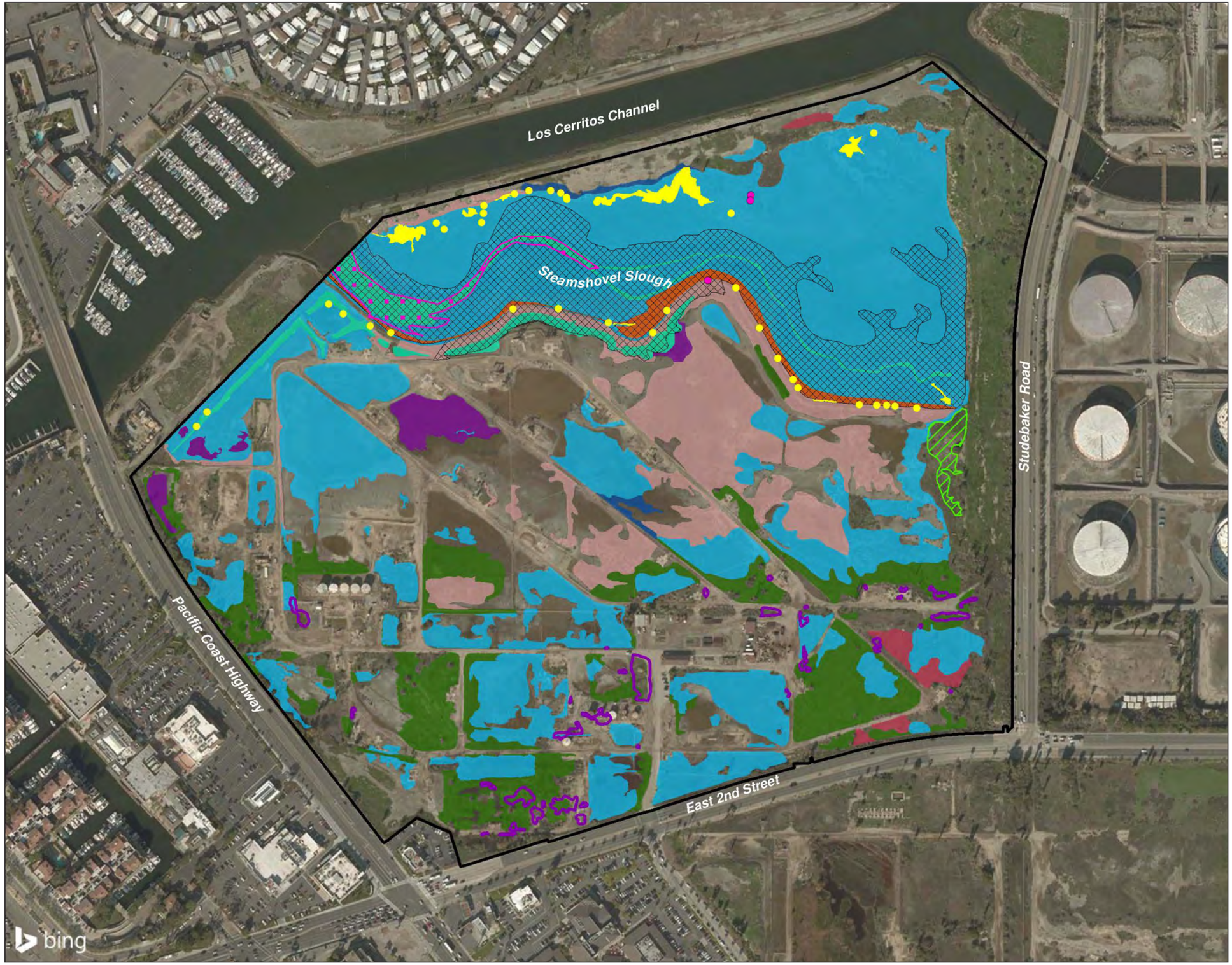

Synergy Project Boundary
Estuary Seablite
Wooly Seablite
Estuary Seablite
GLA Southern Tarplant Mapping
Pacific Green Sea Turtle Habitat
CA Least Tern/California Brown Pelican Foraging Habitat

Areas Meeting ESHA Criteria

Southern Tarplant (Meets ESHA Criteria)
Alkali Heath Flats (G4 S3)
California Cordgrass Marsh (G4 S3)
Mudflats - Tidal
Parish's Glasswort Patches (G4 S2)
Pickleweed Mats (G4 S3)
Saltgrass Flats (G5 S4) (Habitat for Saltmarsh Wandering Skipper)
Shoregrass Flats
Tidal Channel

N

0 175 350 700
Feet

LSA

FIGURE 4.4.7b

General Plan Land Use and Urban Design Elements
Southeast Area Specific Plan
Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates
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Pumpkin Patch Project Boundary

City Right of Way

Impact Footprint

GLA Southern Tarplant Mapping (Does Not Meet ESHA Criteria)

Areas Meeting ESHA Criteria

Pickleweed Mats (G4 S3)

N

0 50 100 200

Feet

LSA

FIGURE 4.4.7c

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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LCWA/Synergy Project Boundary

Impact Boundary

Areas Not Meeting ESHA Criteria

Disturbed

Mulefat Thickets

Non-Native Grassland

Ornamental

N

0 40 80 160

Feet

LSA

FIGURE 4.4.7d

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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Project Boundary

GLA Southern Tarplant Mapping

2012 Tidal Influence Tarplant Mapping

2018 Coastal Restoration Consultants Tarplant Mapping

Areas Meeting ESHA Criteria

Black Willow (G4 S3)

Pickleweed Mats (G4 S3)

Saltgrass Flats (G5 S4) (Habitat for Saltmarsh Wandering Skipper)

N

0 100 200 400

Feet

LSA

FIGURE 4.4.7e

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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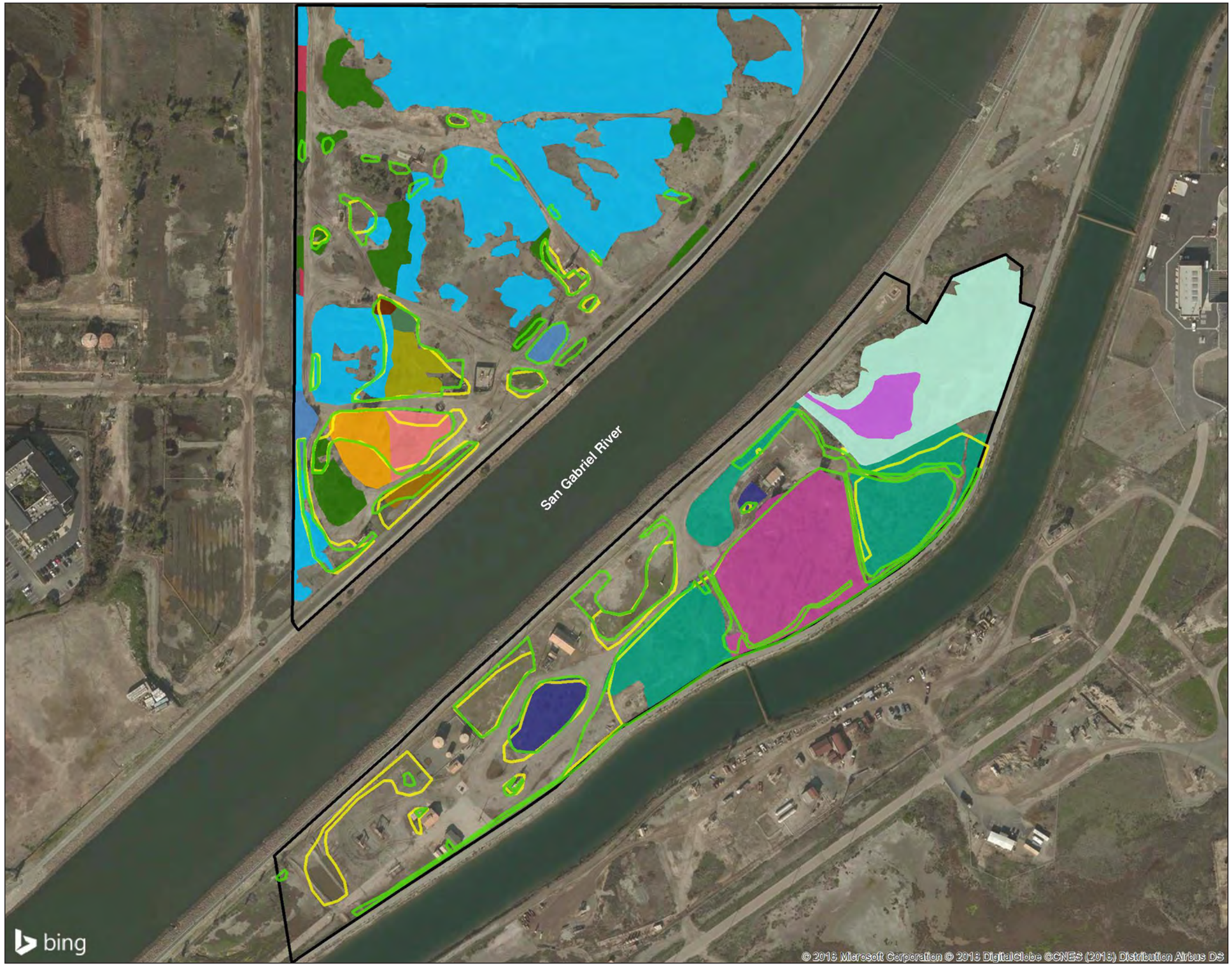

2012 Tidal Influence Southern Tarplant Mapping

2018 Coastal Restoration Consultants Southern Tarplant Mapping

LCWA Property Boundary

Areas Meeting ESHA Criteria

- Alkali Heath Flats (G4 S3)
- Bassia Thicket*
- Black Mustard-Australian Saltbush Thicket*
- Coastal Sage Scrub*
- Mixed Coastal Sage Scrub - Southern Tarplant
- Coastal Sage Scrub/Mulefat Thicket
- Marine Intertidal
- Mulefat Thickets*
- Ornamental
- Pickleweed Mats (G4 S3)
- Saltgrass Flats (G5 S4) (Habitat for Saltmarsh Wandering Skipper)
- Saltgrass Flats-Australian Saltbush Thicket*
- Southern Coastal Salt Marsh (G2 S2)
- Southern Tarplant-Bassia Thicket*
- Southern Tarplant-Disturbed*

*Supports Southern Tarplant

N

0 112.5 225 450
Feet

LSA

FIGURE 4.4.7f

General Plan Land Use and Urban Design Elements
Southeast Area Specific Plan
Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates
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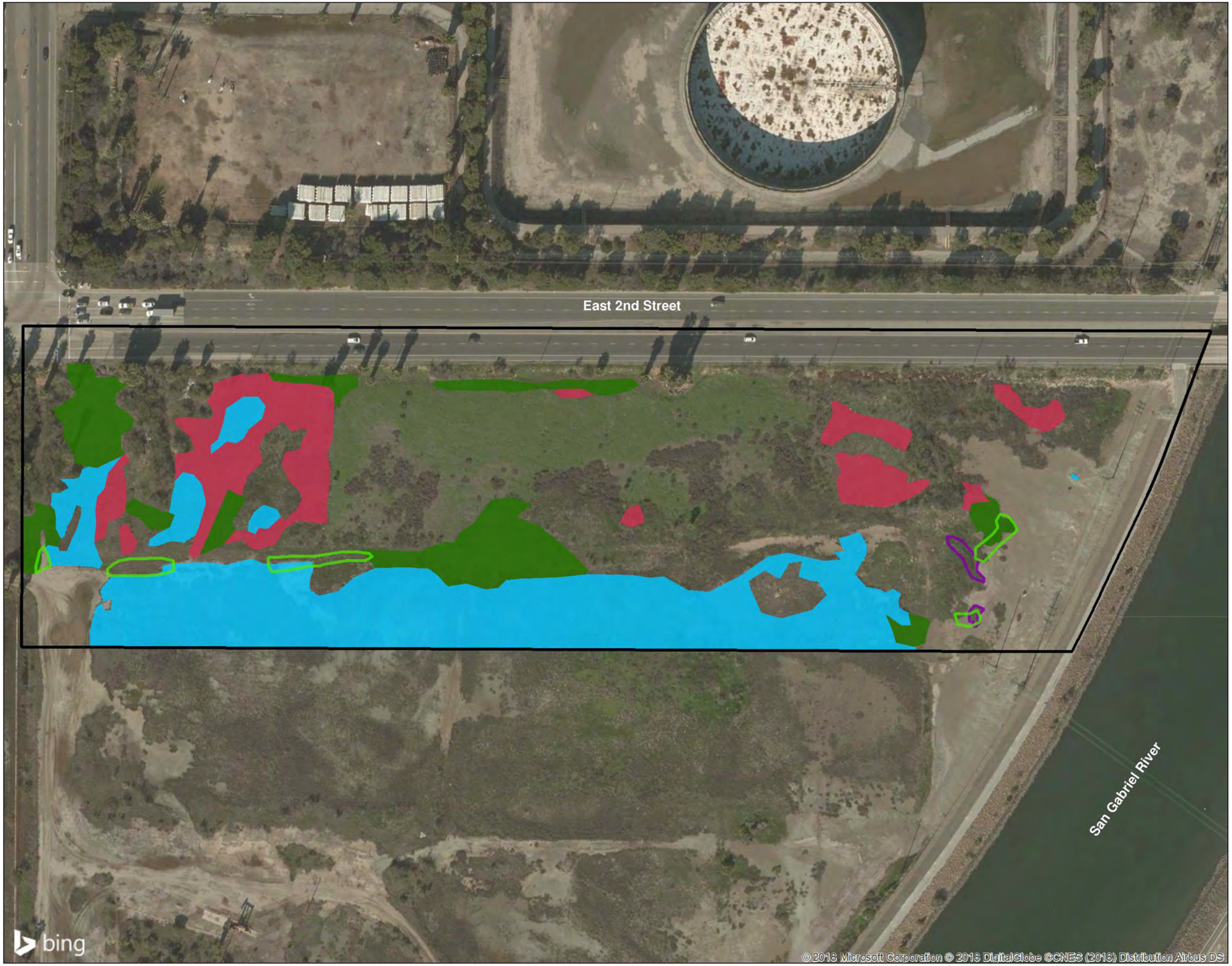

Bryant Property Boundary

GLA Southern Tarplant Mapping

2012 Tidal Influence Southern Tarplant Mapping

2018 Coastal Restoration Consultants Southern Tarplant Mapping

Areas Meeting ESHA Criteria

Alkali Heath Flats (G4 S3)

Pickleweed Mats (G4 S3)

Saltgrass Flats (Habitat for Saltmarsh Wandering Skipper)

N

0 62.5 125 250

Feet

LSA

FIGURE 4.4.7g

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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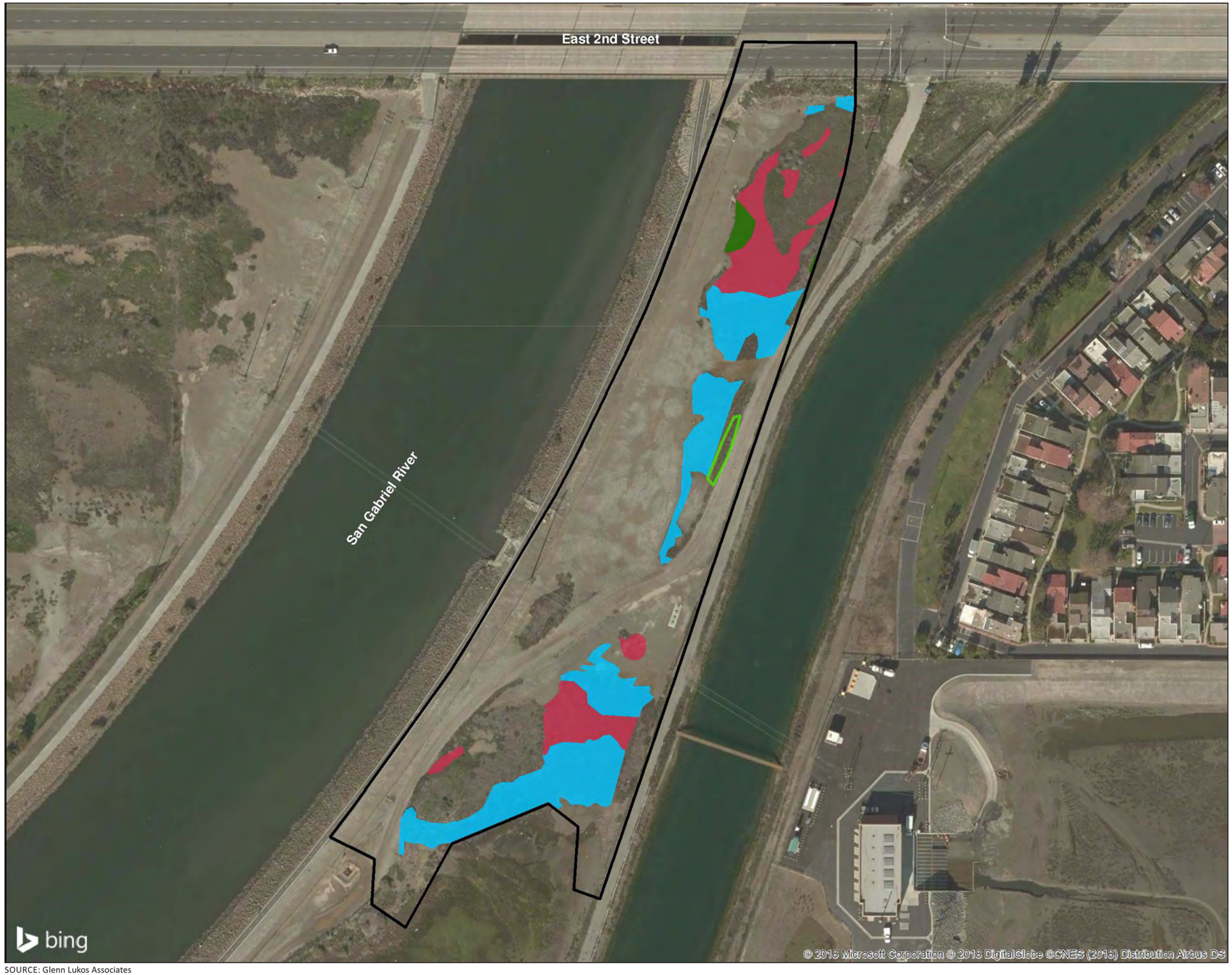

Bryant Property Boundary

2012 Tidal Influence Southern Tarplant Mapping

2018 Coastal Restoration Consultants Southern Tarplant Mapping

Areas Meeting ESHA Criteria

Alkali Heath Flats (G4 S3)

Pickleweed Mats (G4 S3)

Saltgrass Flats (Habitat for Saltmarsh Wandering Skipper)

N

0 62.5 125 250

Feet

LSA

FIGURE 4.4.7h

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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Loynes Property Boundary

Areas Not Meeting ESHA Criteria

2012 LSA Southern Tarplant Mapping

N

0 62.5 125 250

Feet

LSA

FIGURE 4.4.7i

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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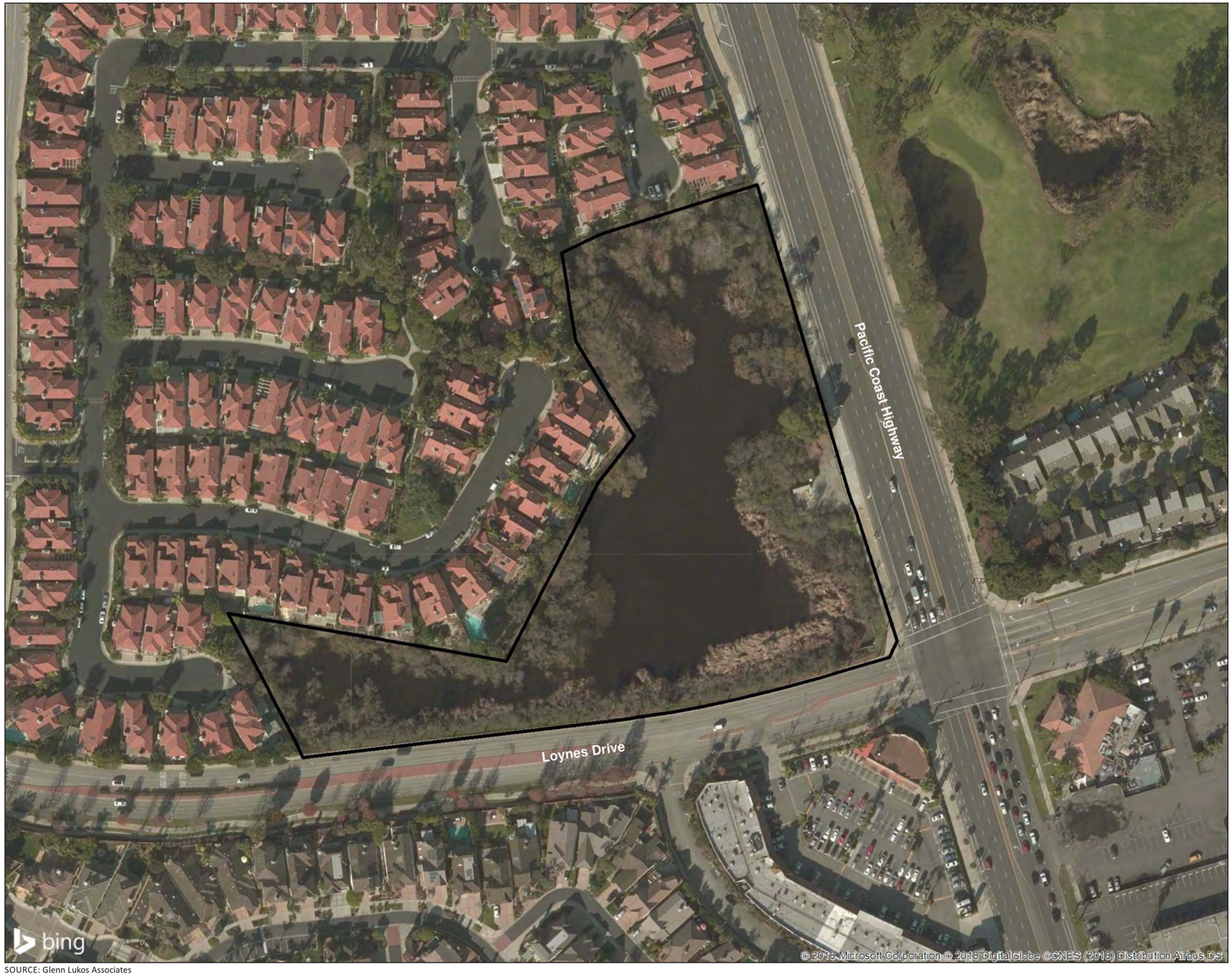

Areas Not Meeting ESHA Criteria

Sim's Pond Biological Reserve Property Boundary

N

0 62.5 125 250
Feet

LSA

FIGURE 4.4.7j

General Plan Land Use and Urban Design Elements
Southeast Area Specific Plan
Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates
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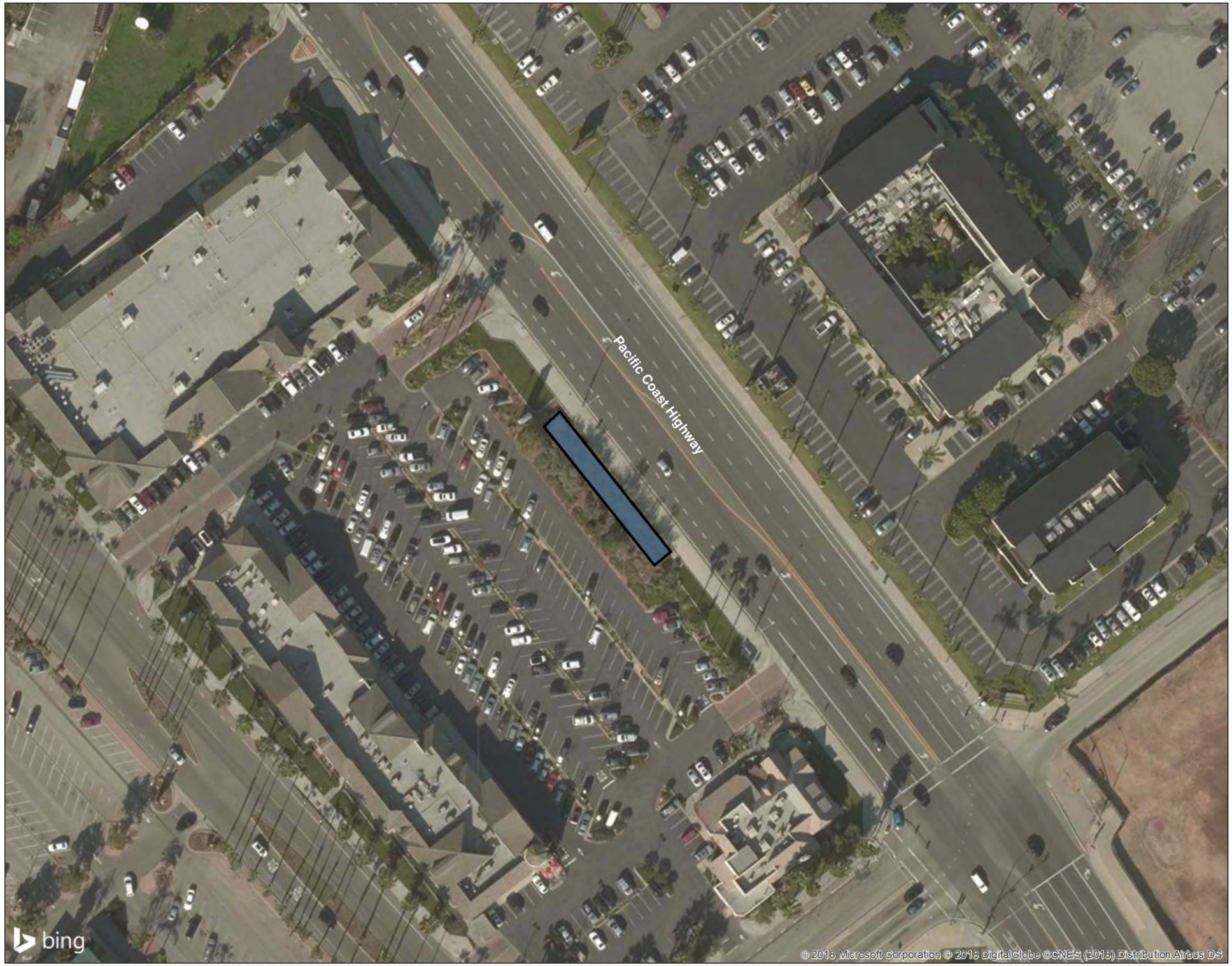

Whole Foods Parking Lot Swale Boundary

Areas Not Meeting ESHA Criteria

Sandbar Willow Thickets (G4 S4)/Cattail Marsh (G5 S4)

N

0 37.5 75 150

Feet

LSA

FIGURE 4.4.7k

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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Subarea 11 Property Boundary

GLA Southern Tarplant Mapping

Areas Meeting ESHA Criteria

Parish's Glasswort Patches (G4 S2)

Pickleweed Mats (G4 S3)

N

0 50 100 200

Feet

LSA

FIGURE 4.4.7I

General Plan Land Use and Urban Design Elements

Southeast Area Specific Plan

Vegetated Habitat Areas

SOURCE: Glenn Lukos Associates

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4.5 NOISE

4.5.1 Introduction

This section evaluates the potential short-term and long-term noise and vibration impacts associated with the construction and operation of potential development that would be allowed under the proposed General Plan Land Use and Urban Design Elements (LUE/UDE) Project (proposed project). This analysis evaluates potential noise and vibration impacts within the planning area by evaluating the effectiveness of the proposed Land Use Element (LUE)/Urban Design Element (UDE) Goals, Strategies, and Policies. This section is based on information provided in the Noise Element (1975) of the City of Long Beach's (City) General Plan (which is currently going through the process of updating), the Noise Ordinance of the City's Municipal Code (adopted 1977, most recent revision 2009) and the *Noise and Vibration Impact Analysis* (LSA Associates, Inc. [LSA], 2019) (Appendix D) prepared for the project.

4.5.2 CEQA Baseline

Although the Notice of Preparation (NOP) was published in May 2015, the baseline for noise is 2018 when the analysis for the Recirculated Draft Environmental Impact Report (EIR) was initiated. This provides an updated baseline that reflects current conditions related to noise at the time the Recirculated Draft EIR was prepared.

4.5.3 Methodology

This 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 increases in noise associated with the proposed project.

4.5.3.1 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 defines the noise environment of the planning area in terms of sound pressure levels and the project's effect on sensitive land uses.

4.5.3.2 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.

4.5.3.3 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.

4.5.3.4 Vibration

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Building damage is not a factor for normal transportation projects, including rail projects, with the occasional exception of blasting and pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

To distinguish vibration levels from noise levels, the unit is written as “vibration velocity decibels” (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.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet (ft) of the vibration source, although there are examples of

ground-borne vibration causing interference out to distances greater than 200 ft.[1] When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path usually will be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people as well as damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings.[2] Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV).

Factors that influence ground-borne vibration and noise include the following:

- **Vibration Source:** Vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source
- **Vibration Path:** Soil type, rock layers, soil layering, depth to water table, and frost depth
- **Vibration Receiver:** Foundation type, building construction, and acoustical absorption

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground compared to at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock.

Experience with ground-borne vibration indicates that: (1) vibration propagation is more efficient in stiff, clay soils than in loose, sandy soils; and (2) shallow rock seems to concentrate the vibration energy close to the surface and can result in ground-borne vibration problems at large distances from the source. Factors such as layering of the soil and depth to the water table can have significant effects on the propagation of ground-borne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

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.[3]

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1 Federal Railroad Administration. 2012. *High-Speed Ground Transportation Noise and Vibration Impact Assessment.* September.

2 Ibid.

3 Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control*.

4.5.4 Existing Environmental Setting

4.5.4.1 Existing Planning Area

The existing planning area includes the entire area within the City's jurisdictional limits, as the project involves an update to the City's General Plan and is intended to guide growth and future development through the horizon year 2040. Specifically, the project proposes to update the City's current 1989 Land Use Element (LUE) and adopt an entirely new Urban Design Element (UDE) into its General Plan. Through implementation of the LUE, the City is looking to target future growth in a few specific transit-rich corridors and districts in order to address existing overcrowding, increase housing and job density in commercial and industrial areas, improve the corridors, and maintain and improve the existing established neighborhoods. The LUE will replace land use designations with "PlaceTypes" that are more flexible and comprehensive, and will lead to a subsequent comprehensive Zoning Code update. Major land use changes proposed as part of the LUE are identified as "Major Areas of Change" and are illustrated on previously referenced Figure 3.6 in Chapter 3.0, Project Description.

The City is also proposing to adopt a new UDE as part of its General Plan to replace its existing Scenic Routes Element (SRE). The UDE would work toward shaping the continued evolution of the urban environment in Long Beach while also allowing for a balance between the existing natural environment and new development. The UDE is interconnected with the LUE and will provide minimum design standards for the PlaceTypes and their respective component development types and patterns.

The planning area is currently developed and consists of a mix of residential, commercial, medical, institutional, industrial, and open space and recreation uses.

4.5.4.2 Sensitive Uses in the Project Vicinity

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 the authority to require measures to protect public health and safety. Therefore, this section includes a discussion of the project's potential to introduce new sensitive receptors to areas where conditions would be exacerbated by project implementation.

4.5.4.3 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.

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 4.5.1. Noise measurement data collected during monitoring are summarized in Table 4.5.A. The meteorological conditions at the time of the noise monitoring are shown in Table 4.5.B. 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.

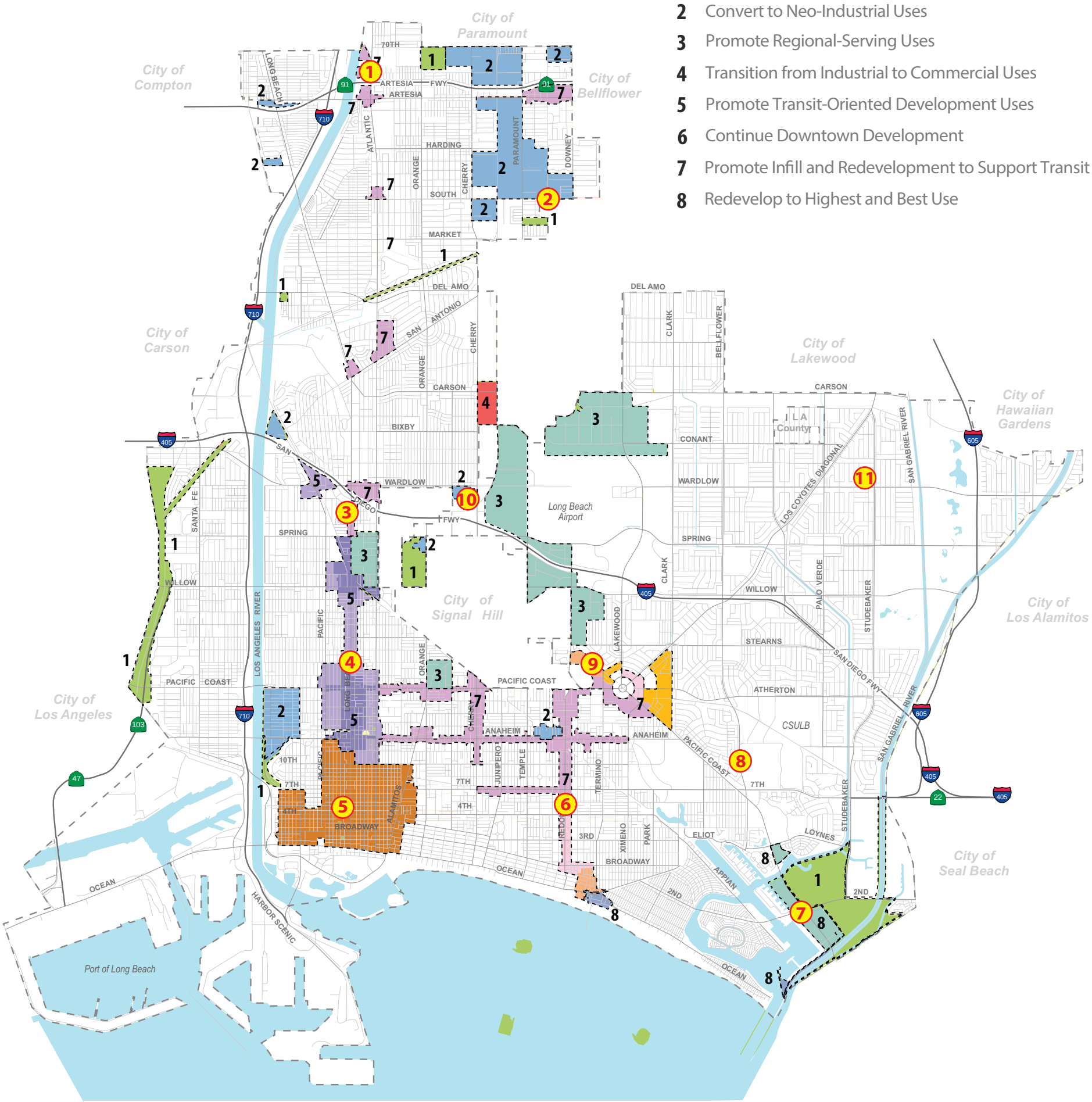
Existing Roadway Noise Levels. Motor vehicles with their distinctive noise characteristics are one of the primary sources of noise in Long Beach. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Major contributing roadway noise sources include Interstates 710 (I-710) and 405 (I-405), State Route 91 (SR-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.

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 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 service hours are from approximately 4:45 a.m. until 1:00 .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,



LSA

LEGEND

(#) - Noise Monitoring Locations

N

0 .5 1
MILE

SOURCE: Proposed Land Use Element, City of Long Beach, March 2018

FIGURE 4.5.1

Long Beach General Plan
Land Use and Urban Design Elements
Noise Monitoring Locations

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Table 4.5.A: 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: *Noise and Vibration Impact Analysis* (LSA Associates, Inc. [LSA], 2019) (Appendix D)
[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 4.5.B: 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: *Noise and Vibration Impact Analysis* (LSA 2019) (Appendix D)
mph = miles per hour

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.[4]

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 on the coast within the Port boundaries, noise is rarely audible at such a large distance. 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.

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.

[4] 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).

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.

4.5.4.4 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 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.

4.5.5 Regulatory Setting

The following section summarizes the regulatory framework related to noise, including federal, State and City of Long Beach plans, policies, and standards.

4.5.5.1 Federal Regulations

United States Environmental Protection Agency. In 1972, Congress enacted the United States Noise Control Act. This act authorized the United States Environmental Protection Agency (USEPA) to publish descriptive data on the effects of noise and 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). For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to 70 dBA during a 24-hour period of time. 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. The USEPA cautions that these identified levels are guidelines, not standards.

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 4.5.C. The criteria presented in Table 4.5.C 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.

Table 4.5.C: 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

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.

4.5.5.2 State Regulations

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 4.5.D.[5]

4.5.5.3 Local and Regional Policies and Regulations

City of Long Beach Municipal Code. The City of Long Beach addresses noise impacts in 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.[6] 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 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 4.5.E and the Interior Noise Limits shown in Table 4.5.F.

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.

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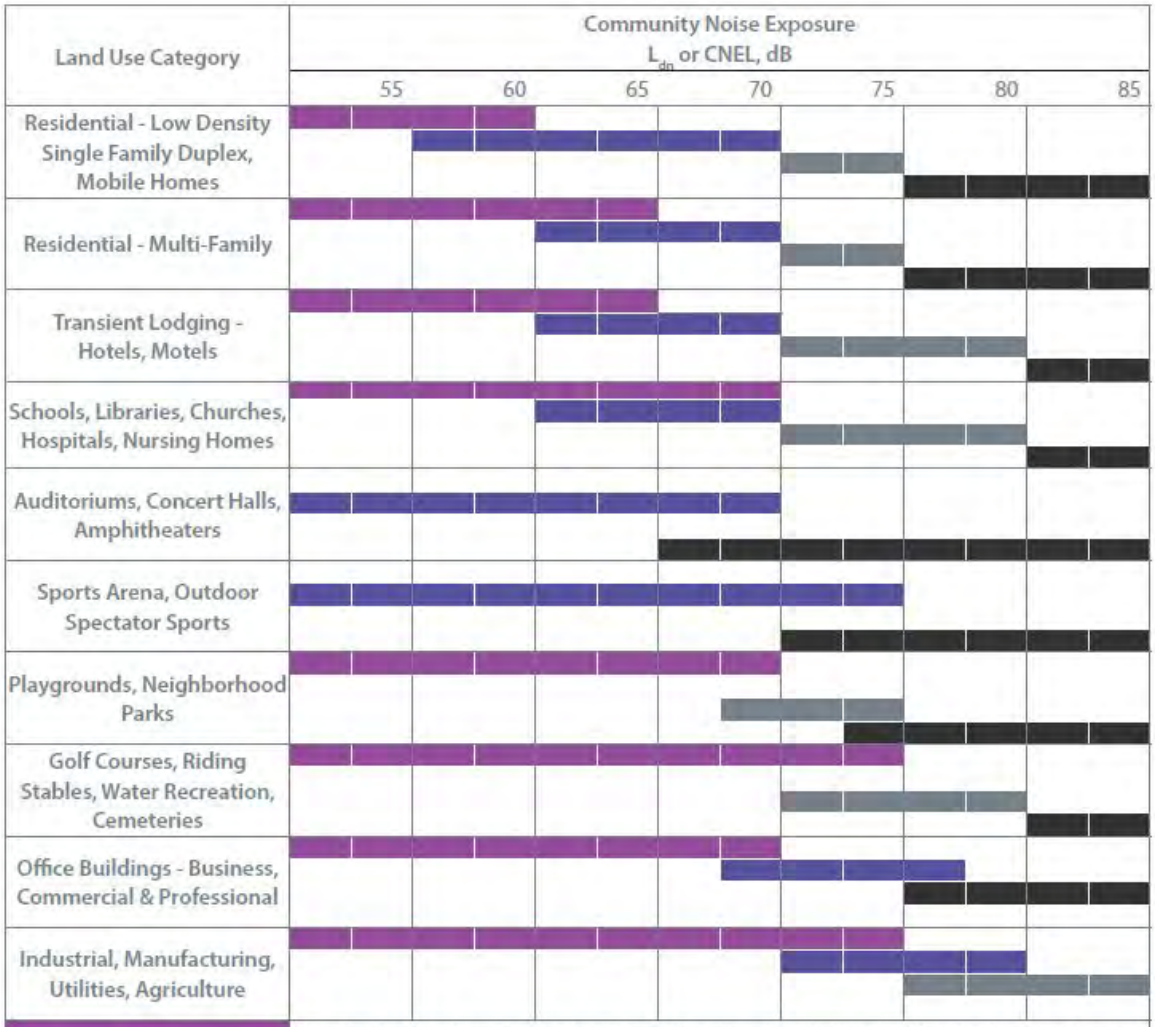
5 State of California Governor's Office of Planning and Research, 2017. *State of California General Plan Guidelines*. Appendix D: Noise Element Guidelines. July.

6 City of Long Beach. 2019. Municipal Code. February.

Table 4.5.D: 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 4.5.E: 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 (adopted 1977, most recent revision 2009.
[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 4.5.F: 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 (adopted 1977, most recent revision 2009.
dBA = A-weighted decibel(s)

City of Long Beach General Plan Noise Element. 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.[7] 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

[7] 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/.

healthier and quieter environment for all citizens while maintaining a reasonable level of economic progress and development.[8]

The following goals and categorical recommendations (i.e., policies) of the City's Noise Element are applicable to the proposed project:

GOAL 1: To improve and preserve the unique and fine qualities of Long Beach and eliminate undesirable or harmful elements.

GOAL 2: To develop a well-balanced community offering planned and protected residential districts…, well distributed commercial districts, planned and restricted industrial districts, and a coordinated circulation system for fast, safe, and efficient movement of people and commodities.

GOAL 3: To improve the urban environment in order to make Long Beach a more pleasant place to live, work, play, and raise a family.

GOAL 5: To develop specific neighborhood noise plans with the participation of resident citizen groups.

Goals Related to Land Use Planning

GOAL 1: Provide the City with limited maximum noise levels by judicious land use planning policies.

GOAL 2: Develop standards for local fixed point (stationary) noise sources.

GOAL 3: Set measurable goals for the reduction of noise in problem areas.

GOAL 4: Propose land uses or activities that would act as buffer zones between incompatible land uses.

GOAL 5: Consider existing ambient noise levels before establishing specific permitted levels of sound.

GOAL 6: Locate and mitigate noise impacts from highways and freeways on residential land uses and institutional, recreational, and school facilities.

GOAL 7: Identify and anticipate existing or proposed land uses that cause (directly and indirectly) noise-generating activities.

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8 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/.

GOAL 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

GOAL 9: Protect business and industrial areas against intrusions of non-business or non-industrial land uses which are highly sensitive to noise.

Goals Related to the Noise Environment

GOAL 1: To prevent the loss of relatively quiet areas of Long Beach by regulating potential noise sources.

GOAL 6: To describe the noise problem areas which are within local control.

GOAL 7: To continue to take restorative measures to remedy and reduce high noise areas within the City.

Goals Related to Transportation Noise

GOAL 1: Recommending a plan for compatible land uses for those portions of Long Beach within transportation noise zones.

GOAL 2: Discouraging within transportation noise zones the development of noise sensitive uses that cannot be sufficiently insulated against externally generated noise at reasonable cost.

GOAL 3: Developing long range re-allocation of noise sensitive land uses away from transportation noise impact areas.

GOAL 4: Providing standards and criteria for noise emissions from transportation facilities.

GOAL 8: Reducing the level of noise exposure from surface transportation in problem areas not preempted by State or Federal law.

GOAL 9: Reducing the level of noise exposure from air operations and aircraft ground maintenance in problem areas no preempted by State and Federal law.

Goals Related to Construction and Industrial Noise

GOAL 1: To reduce the level of noise exposure to the population caused by demolition and construction activities.

GOAL 2: To reduce the level of outdoor noise exposure to the population generated by industries.

Goals Related to Population and Housing Noise

GOAL 1: To reduce the level of outdoor noise exposure the population is subjected to.

GOAL 2: To achieve greater indoor quietness in multiple dwelling residential buildings.

GOAL 3: To reduce the level of noise generated by the population into the environment of the City.

GOAL 5: To stimulate the redevelopment or refurbishment of blighted housing to create quieter neighborhoods and better soundproofed dwellings.

GOAL 6: To require better sound deadening design on new housing units where acoustical problems could develop.

GOAL 7: To reduce the level of incoming and outgoing noise into and from residential dwellings within the City.

GOAL 9: To facilitate wherever feasible, noise standards that shall be employed in a manner consistent with proposed land uses, population densities, and building types.

Goals Related to Public Health and Safety

GOAL 1: To inform citizens of real and potential noise hazards, both physical (to the hearing system) and psychological (to the nervous system).

GOAL 2: To regulate and control noise which is injurious to health or psychological well-being.

GOAL 3: To continue to reduce excessive traffic noise in problem areas by the construction of sound barriers, further synchronization of traffic lights, and posting of "Quiet Zone" signs around hospitals and other highly noise sensitive land uses.

GOAL 7: To advise citizens on noise-related problems, complaints and to suggest solutions on an individual basis.

Recommendations Related to Development Policies

Policy 4.1: Where incompatibility exists at present, action shall first be taken to change the noise environment.

Policy 4.2: Where incompatibility exists at present and future projections indicate that the noise environment cannot be reduced to create compatibility, every effort shall be made to change the development to achieve compatibility.

Policy 4.3: No future development shall be allowed which is incompatible with the existing or future noise environment unless the developer can show:

a. The development can reasonably be expected to be compatible at some time in the near future; and

b. Other factors favoring the development (social, environmental, for example) outweigh factors against the development.

Policy 4.4: No future development shall be allowed which causes other developments to become incompatible with their noise environments.

4.5.6 Thresholds of Significance

Threshold 4.5.1: **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;**

Threshold 4.5.2: **Generate excessive ground-borne vibration or ground-borne noise levels; or**

Threshold 4.5.3: **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 the 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.

4.5.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures and would not include any project design features related to noise. Although there are no compliance measures and project design features related to noise, the LUE and UDE Goals, Strategies, and Policies are intended to reduce noise and vibration impacts of future development envisioned under the proposed project. In addition, development allowed under the proposed project would be subject to compliance with the City's Noise Ordinance.

4.5.7.1 Proposed Land Use Element Strategies and Policies

The following proposed Goals, Strategies, and Policies are applicable to the analysis of Noise and would replace existing goals, strategies, and policies outlined in the City's existing LUE and SRE following project approval:

Land Use Element.

- **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 and/or within 500 feet of a freeway. 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.

Urban Design Element.

- **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.

4.5.8 Project Impacts

Threshold 4.5.1: Would the project 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?

Short-Term Construction-Related Noise Impacts: Significant and Unavoidable Impact.

Short-Term Construction-Related Noise Impacts. Construction associated with implementation of the proposed project would occur over a period of approximately 21 years. Construction activities associated with development allowed under the proposed project 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 4.5.G 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.

Table 4.5.G: 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

Construction anticipated under the proposed project 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 anticipated 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.

Noise-sensitive receptors include residences, schools, hospitals, churches, and similar uses that are sensitive to noise. Construction and operation of development allowed under the proposed project could adversely affect nearby noise-sensitive land uses. Construction noise is permitted by the City 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 noise impacts are currently exempt from specific noise levels limits.

Construction activities associated with development anticipated 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 (e.g., pile driving, nighttime construction work, or 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, the proximity to sensitive receptors, and the types of construction equipment associated with new construction projects are all unknown at this time, this impact is considered significant and unavoidable in an abundance of caution.

Long-Term Stationary-Source Noise Impacts: Less than Significant Impact.

Long-Term Stationary-Source Noise Impacts. Development allowed under the proposed project 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 proposed project is not anticipated to result in increased railroad operations within the City. However, the project proposes the TOD 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 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 in the Noise Element of the General Plan to minimize the effects of noise on noise-sensitive uses, the LUE/UDE include 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 16-10, 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 proposed project 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 4.5.E of this Recirculated Draft EIR), which sets exterior noise standards for the various land uses within the City. As discussed above, implementation of the proposed project would include policies and strategies that would ensure 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 proposed project would not expose persons to noise levels in excess of the City's Municipal Code, and no mitigation would be required.

Long-Term Traffic Noise Impacts: Less than Significant Impact.

Long-Term Traffic Noise Impacts. Potential sources of permanent increase in ambient noise include noise resulting from increased traffic on roadways in the planning area. It is projected that traffic volumes on some streets within the City would increase due to the growth envisioned under the proposed project. 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 4.5.H 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 4.5.H, the project-related traffic noise increase would be up to 2.1 dBA, which is considered less than the threshold of perceptibility for humans (i.e., 3 dBA). Therefore, implementation of the proposed project is not expected to result in the generation of substantial traffic noise increases. This would be considered less than significant, and no mitigation would be required.

Threshold 4.5.2: Would the project generate excessive ground-borne vibration or ground-borne noise levels?

Less than Significant Impact with Mitigation. As previously described, 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 proposed project 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, mitigation would be required. 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. Compliance with Mitigation Measure MM NOI-1 would serve to reduce impacts related to the exposure of sensitive receptors to excessive ground-borne vibration or noise levels to a less than significant level.

Table 4.5.H: 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
	Broadway to Ocean Boulevard	7,060	6,804	-0.2	7,886	7,630	-0.1	0.3

Table 4.5.H: 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 4.5.H: 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
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

Table 4.5.H: 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		
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
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

Table 4.5.H: 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	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
Willow Street	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
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

Table 4.5.H: 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	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
7th Street	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
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

Table 4.5.H: 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		
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: *Noise and Vibration Impact Analysis* (LSA 2019) (Appendix D).
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
I = Interstate
PCH = Pacific Coast Highway

Threshold 4.5.3: **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, would the project expose people residing or working in the project area to excessive noise levels?**

No Impact. As previously described, 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, 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 proposed project would not result in the exposure of sensitive receptors to excessive noise levels from aircraft noise sources. No mitigation measures are required.

4.5.9 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 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.

4.5.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects. A cumulative noise or vibration impact would occur if multiple sources of noise and vibration combine to create impacts in close proximity to a sensitive receptor. Therefore, the cumulative area for noise impacts is the City's General Plan planning area and any sensitive receptors within the planning area.

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 anticipated 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. Although Mitigation Measure MM NOI-1 would reduce construction noise associated with future projects, since the location, the proximity to sensitive receptors, and the types of construction equipment associated with new construction projects are all unknown at this time, in an abundance of caution, cumulative construction noise impacts would be considered to have a significant and unavoidable cumulatively 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 proposed project would not result in a 3 dBA increase in traffic noise level in the City and would not generate a significant impact under long-term 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.

4.5.11 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. Although Mitigation Measure MM NOI-1 would reduce construction noise associated with future projects, since the location, the proximity to sensitive receptors, and the types of construction equipment associated with new construction projects are all unknown at this time, this impact is considered significant and unavoidable in an abundance of caution (Threshold 4.5.1).

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 (Threshold 4.5.2).

4.6 POPULATION AND HOUSING

4.6.1 Introduction

This section provides a discussion of the existing population, housing, and employment characteristics in the City of Long Beach (City), as well as an analysis of potential impacts that could result from implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project) with regard to Population, Housing, and Employment. This section is based on sources of demographic information provided by agencies including the Southern California Association of Governments (SCAG), the State of California Department of Finance (DOF), the United States Census Bureau (U.S. Census Bureau) American Community Survey, the 2013–2021 Housing Element (2014) of the City's General Plan, *Methodology for Calculating Growth in Socioeconomic Data Associated with the Long Beach General Plan Land Use Element* (LSA; January 2, 2019) (Appendix E), the Draft Land Use Element (2018) (Appendix H), and the United States Department of Housing and Urban Development (HUD) Assessment of Fair Housing (2016), as well as the City's own records.

4.6.2 CEQA Baseline

At the time that the Notice of Preparation (NOP) was published (May 2015), SCAG had not yet approved the Final 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Therefore, socioeconomic data for the baseline year of 2012 and growth projections for the City for the horizon year 2040 were utilized in the 2016 Draft EIR. Since the release of the 2016 Draft EIR, SCAG approved the Final 2016 RTP/SCS and made minor updates to 2012 baseline socioeconomic data and 2040 growth projections with input from the City. The Final 2016 RTP/SCS also updated the baseline year for socioeconomic data for the County of Los Angeles (County) from 2012 to 2015 and made minor updates to 2040 growth projections for the County.

The inclusion of socioeconomic data from the years 2012 and 2015 for the City and County, respectively, is appropriate because the Final 2016 RTP/SCS has been formally adopted by SCAG. There is substantial evidence to support the determination that using SCAG 2016 RTP/SCS data as the baseline for population and housing impacts is appropriate because it is consistent with regional growth forecasts for the City, the County, and the SCAG region.

4.6.3 Methodology

This section compares existing population, housing, and employment characteristics in the City and evaluates the proposed project for changes to population, housing, and employment due to implementation of the proposed General Plan Land Use Element (LUE) and the Urban Design Element (UDE).

In order to compare existing socioeconomic conditions to the potential project-related increase in population, housing, and employment, this section relies upon several data sources, including SCAG's 2016–2040 RTP, the proposed LUE, and U.S. Census Bureau data.

4.6.3.1 SCAG's 2016–2040 Regional Transportation Plan

SCAG is the Metropolitan Planning Organization (MPO) for six of ten counties in Southern California, including Imperial County, Los Angeles County, Orange County, Riverside County, San Bernardino

County, and Ventura County. As the designated MPO, SCAG is mandated by the federal government to research and draft plans for growth management in the region. The primary planning document SCAG prepares to manage growth in the region is the RTP, which includes demographic and socioeconomic data for existing conditions and future planning periods. Growth forecasts included in the RTP are provided for the entire SCAG region, and are also broken out by each city and county within the SCAG region. The growth forecasts in the RTP take into account recent and past trends (utilizing current U.S. Census Bureau data), reasonable growth projections and technical assumptions based on growth policies adopted by SCAG and its member agencies. Local agencies are encouraged to participate in the growth forecast and development process.

The 2016–2040 RTP is the most recently approved RTP for the SCAG region and includes a Demographics & Growth Forecast appendix with growth assumptions for the region. The City of Long Beach coordinated with SCAG regarding reasonable growth assumptions for the City based on growth policies included in the proposed LUE. Additionally, growth projections in the Final 2016–2040 RTP are consistent with the planning period for the proposed project (2019 through 2040), and adjustments have been made to reconcile data differences across sources (for example, demographic projection geographies that intersect jurisdictional boundaries). Therefore, these growth projections are used as a reference point for discussing population, housing, and employment growth throughout this section of the Recirculated Draft Environmental Impact Report (EIR).

4.6.3.2 Proposed Land Use Element

In order to meet the City's obligations to the State, the proposed LUE incorporates regional growth projections included in the Final 2016–2040 RTP (refer to Table LU-1 of the proposed LUE). The proposed LUE expands upon the growth projections included in SCAG's Demographics and Growth Forecast to include data provided to the City by the California Department of Housing and Community Development. Following the adoption of the 2016–2040 RTP, the California Department of Housing and Community Development provided the City with updated information regarding the number of housing units needed to satisfy the City's Regional Housing Needs Assessment (RHNA). In addition, under the guidance of HUD, the City prepared its own Assessment of Fair Housing (AFH), adopted in 2016, which provides additional data on housing issues such as overcrowding. The LUE combines these and other data sources to provide a more complete picture of housing needs in the City (refer to Table LU-9 of the LUE). This revised estimate addresses the anticipated population growth as well as the overcrowding of existing residents, using the most recently available data from all the aforementioned sources. Therefore, the LUE housing needs analysis (see Anticipated Buildout including Tables LU-8 and LU-9 in the LUE [included as Tables 4.6.A, 4.6.C, 4.6.D, and 4.6.G below]) is the reference point for housing needs throughout this section of the Recirculated Draft EIR.

4.6.3.3 U.S. Census Bureau–American Community Survey

While SCAG and the proposed General Plan LUE provide key socioeconomic data and growth projections related to population, housing, and employment, key information from the 2016 U.S. Census Bureau's American Community Survey (5-year pooled sample and 1-year estimates) is utilized in this section to describe existing socioeconomic characteristics of the City in the absence of such data in the 2016–2040 RTP and the proposed LUE. Additionally, the 2017 American Community Survey 1-year sample is used for baseline population counts to provide the most recent estimates available.

Although socioeconomic information and impact analysis play a role in environmental impact assessment under the California Environmental Quality Act (CEQA), social and economic changes resulting from a project are not treated as significant effects on the environment (*State CEQA Guidelines,* Section 15064[e]). Socioeconomic data have four principal uses under CEQA:

- When a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. In such cases, the environmental analysis must include a discussion of economic and social changes, but only in sufficient detail to illuminate the chain of cause and effect, with the focus of the analysis being on the physical changes occurring at the end of the process.

- If a proposed project's physical changes in turn cause social or economic changes, then the magnitude of the social or economic changes can be used to determine the significance of the physical changes.

- In determining the feasibility of the proposed measures to mitigate significant effects identified in an EIR, the lead agency must consider social, economic, and housing factors along with technical and environmental factors. If this information is not entered into the public record in some other manner, it can be included in an EIR.

- CEQA allows economic or social information to be included in an EIR or another form. Such information can be related directly to the uses described in the previous three bullet points.

As such, the impact discussion below focuses on the direct growth in population and housing associated with the proposed project. The proposed project's potential to induce unplanned population growth is also assessed in terms of the creation of new employment opportunities and an evaluation of potential impacts to the City's job-to-housing ratio. While these impacts would not cause a direct physical change to the environment, it is important to understand the proposed project's effect on population and housing for the following reasons:

- Population growth generated by the proposed project could create indirect impacts, such as increased demand for public services, traffic, air quality, and noise. CEQA requires the evaluation of indirect impacts. These impacts are addressed in the respective sections of this Recirculated Draft EIR.

- Understanding the impacts to population and housing from project implementation will help assess the adequacy of the policies intended to provide a balance between employment growth and the availability of housing to meet the needs of current and future workers.

- Understanding the impacts to housing demand from project implementation will help address the adequacy of local policies intended to provide additional affordable housing for low-income and moderate-income households.

4.6.4 Existing Environmental Setting

4.6.4.1 Population, Housing, and Employment Trends in the City and County

The planning area includes the entire 50 square miles within the City's jurisdictional limits. In its existing condition, the City is largely urbanized and includes a range of housing types and land uses that provide housing and employment opportunities to its residents.

Population Growth. According to the population estimates by the 2017 American Community Survey, the estimated population numbers for the City of Long Beach and the County of Los Angeles in 2017 were 469,459 and 10,163,507 persons, respectively.[1]

As shown below in Table 4.6.A, SCAG projections included in the Final 2016–2040 RTP indicate that the City's 2012 population was estimated to be 466,255. The City's population is anticipated to grow by approximately 3.9 percent (approximately 18,000 persons) between 2012 and 2040. The County is expected to experience a higher increase of approximately 13.3 percent (approximately 0.53 percent per year) between 2015 and 2040.

Table 4.6.A: Population Forecasts for the City of Long Beach and the County of Los Angeles

	City of Long Beach 2012/ Los Angeles County 2015	2040	Change 2012–2040	Percent Change 2012–2040	No. of Years	Percentage Change per Year
City of Long Beach	466,255	484,485	18,230	3.9%	28	0.14%
Los Angeles County	10,159,000	11,514,000	1,355,00	13.3%	25	0.53%

Source: City of Long Beach General Plan Draft Land Use Element (March 2018) (Appendix H) and SCAG, Final 2016 RTP/SCS Growth Forecast by Jurisdiction (April 2016).
Note: Baseline years vary for City of Long Beach (2012) and County of Los Angeles (2015) Population, Housing, and Employment Forecasts due to varying baseline years for socioeconomic data for the City and Los Angeles County in the Final 2016 RTP/SCS (refer to Tables 8 and 11).
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments

As identified in Table 4.6.A, recent growth trends projected by SCAG suggest that population in the County is anticipated to increase at a faster rate through horizon year 2040 than growth projections for the City. The projected increases in population in the County are likely attributed to the net migration of individuals moving into the region due to the recent increase in job availability, whereas the lower rate of population growth in the City may be an indicator of the demand for additional employment opportunities in the City.

In addition to comparing overall rates of population growth in the City, it is important to consider the age distribution in both the City and the County's populations, as age often shapes housing demand. For example, different age groups prefer different types of housing that is marked by distinct differences in lifestyle, family type, housing preferences, and income levels.

[1] U.S. Census Bureau, American Community Survey, 2017 American Community Survey 1-Year Estimates, Table B01003. Website: http://factfinder2.census.gov> (accessed December 28, 2018).

The median ages in the City and the County are 35.3 years old and 36.6 years old, respectively. As shown in Table 4.6.B, the City has a younger population overall compared to the County, with a higher share of residents under the age of 18 (22.1 percent and 21.9 percent, respectively) and residents between the ages of 18 and 34 (27.4 percent, and 25.8 percent, respectively). The County has a slightly higher percentage of residents between the ages of 35 and 64 (39 percent for the County versus 38.8 percent for the City), and a slightly higher percentage than the City of residents older than age 64 (13.3 percent for the County versus 11.7 percent for the City).

Table 4.6.B: Long Beach and Los Angeles County Age Characteristics

	Percentage Under 18 Years	Percentage Between 18 and 34 Years	Percentage Between 35 and 64 Years	Percentage Over 64 Years
Long Beach	22.1	27.4	38.8	11.7
County of Los Angeles	21.9	25.8	39	13.3

Source: U.S. Census Bureau. American Community Survey 2017 1-Year Estimates. Table S0101.

As illustrated by Table 4.6.B, most of the population in both the City and the County fall within two age groups: (a) 35 to 64 years of age, and (2) 18 to 34 years of age. Therefore, the City and County will experience an increase in their older adult populations during the life of the proposed project (i.e., planning period extends to the horizon year 2040) given the large number of middle-age residents currently residing in the City and the County.

Housing. As illustrated by Table 4.6.C, the City is anticipated to experience an approximately 17.4 percent increase in the number of households between 2012 and 2040 (an additional 28,524 housing units), whereas the County is anticipated to experience a lower rate of increase in households than the City at approximately 10.9 percent between 2015 and 2040.

Table 4.6.C: Housing Forecasts for the City of Long Beach and the County of Los Angeles

	City of Long Beach 2012/ County of Los Angeles 2015	2040	Change 2012–2040	Percentage Change 2012–2040	No. of Years	Percentage of Change per Year
City of Long Beach	163,794	192,318	28,524	17.4%	28	0.62%
County of Los Angeles	3,285,400	3,642,600	357,200	10.9%	25	0.43%

Source: City of Long Beach General Plan Draft Land Use Element (March 2018) (Appendix H) and SCAG, Final 2016 RTP/SCS Growth Forecast by Jurisdiction (April 2016).
Note: Baseline years vary for City of Long Beach (2012) and County of Los Angeles (2015) Population, Housing, and Employment Forecasts due to varying baseline years for socioeconomic data for the City and Los Angeles County in the Final 2016 RTP/SCS (refer to Tables 8 and 11).
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments

As illustrated by Tables 4.6.A and 4.6.C, the City's population is anticipated to increase at a lower rate than the rate of household growth in the City due to overcrowding of existing households. As detailed in the AFH, 12.2 percent of all households in the City are experiencing overcrowding. It appears that this overcrowding is due to several factors, including a mismatch between the housing stock and the needs of households in the City, a lack of sufficient growth in housing supply in recent decades that has not kept up with population growth, and a lack of sufficient affordable housing options to meet the needs of existing residents.

According to the City's 2013–2021 Housing Element, single-family detached units comprise 42 percent (73,865 units) of the City's existing housing stock. The balance of the City's housing stock is composed of attached units (e.g., duplexes, apartments, and condominium units), multifamily units, and mobile homes. The majority of the City's housing stock is greater than 30 years old. The approximate age of the City's housing stock is also an indicator of the potential for deteriorating housing conditions. For example, housing over 30 years in age may require rehabilitation needs and housing over the age of 50 years may require total building replacement. Concentrations of older deteriorated housing are currently located in the Downtown, Central, and Northern areas of the City. These areas are also characterized by socioeconomically disadvantaged communities with fewer affordable housing options and the highest rates of overcrowding.

In addition to the age of the City's existing housing stock, it is important to note that there are approximately 26,178 large households (defined in the City's 2013–2021 Housing Element as five or more people) in the City, which account for approximately 16 percent of all households. Of the large households, most households (57 percent) consist of renters and/or are low-income earners (79 percent). However, there are currently only 12,951 rental units in the City that contain three or more bedrooms. The existing imbalance between available large housing units and the demand for such units has ultimately resulted in overcrowding[1] conditions and explains the discrepancy between the City's high household growth rates and its relatively low population growth rate.

Employment. As of January 2019, the City had a labor force of 243,000 and the County had a labor force of 5,188,700, with approximately 11,500 and 239,900 people unemployed, respectively.[2] The January 2019 unemployment rate was 4.2 percent for the City and 4.6 percent for the County.[3]

As shown in Table 4.6.D, the percentage of residents employed in the City is anticipated to increase by approximately 18.6 percent resulting in approximately 28,000 new employees by 2040. The County's employment is also anticipated to increase, but to a slightly lesser degree, at 17.1 percent by 2040.

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[1] The California Department of Housing and Community Development defines "overcrowding" as a household with more than one person per room and "severe overcrowding" as more than 1.5 persons per room. Overcrowding typically occurs as a result of a high housing costs and a lack of affordable housing units, causing families to have multiple individuals per room.

[2] State of California Employment Development Department (EDD). 2019. Monthly Labor Force and Unemployment Rate for Cities and Census Designated Places, Los Angeles County, January 18, 2019, March 2017 Benchmark. Website: https://www.labormarketinfo.edd.ca.gov/geography/losangeles-county.html (accessed on January 31, 2019).

[3] Ibid.

Table 4.6.D: Employment Forecasts for the City of Long Beach and the County of Los Angeles

	City of Long Beach 2012/ County of Los Angeles 2015	2040	Change 2012–2040	Percentage Change 2012–2040	No. of Years	Percentage of Change per Year
City of Long Beach	153,154	181,665	28,511	18.6%	28	0.66%
County of Los Angeles	4,463,000	5,226,000	763,000	17.1%	25	0.68%

Source: City of Long Beach General Plan Draft Land Use Element (March 2018) (Appendix H) and SCAG, Final 2016 RTP/SCS Growth Forecast by Jurisdiction (April 2016).
Note: Baseline years vary for City of Long Beach (2012) and County of Los Angeles (2015) Population, Housing, and Employment Forecasts due to varying baseline years for socioeconomic data for the City and Los Angeles County in the Final 2016 RTP/SCS (refer to Tables 8 and 11).
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments

The City is home to small businesses and larger corporations that represent several employment sectors. Although the City's economy has historically been comprised of aerospace and manufacturing industries, over the last 25 years the City's economy has transitioned to a knowledge-based economy with the primary employment sectors consisting of medical and educational businesses, as illustrated by Table 4.6.E, showing Long Beach's largest employers.

Table 4.6.E: Long Beach's Largest Employers (2016)

Rank	Employer	Number of 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	U.S. Department of Veteran Affairs VA Long Beach Healthcare System	2,951
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 Draft Land Use Element (August 2018) (Appendix H).

4.6.5 Regulatory Setting

4.6.5.1 Federal Policies and Regulations

In 2016, the City adopted an AFH under the guidance of and as required by HUD. The AFH provided direction for the City to address a variety of housing issues identified through data and processes recommended by HUD. The housing issues identified for Long Beach include the disproportionate needs of protected classes, the need for more affordable housing throughout the City, and the need to reduce both displacement and overcrowding in the City. Relatedly, the AFH found that the high number of large households in the City exacerbates overcrowding and housing affordability, and the AFH provided a set of recommendations to tackle the aforementioned issues. These recommendations included reducing barriers to housing construction in the City including through an update to the Land Use Element, expanding the supply of affordable and overall housing, and

diversifying the housing stock to provide options for households of various incomes, size, ages, and family needs.

4.6.5.2 State Policies and Regulations

2017 Legislative Housing Package. In 2017, Governor Jerry Brown signed a historic housing package that consisted of 15 bills aimed at addressing the State's affordable housing crises. While each of these bills takes different approaches to increasing the supply of affordable housing units, several bills aim to facilitate privately funded housing by streamlining local and environmental review processes for certain types of high-priority housing developments.

Senate Bill 35. Senate Bill (SB) 35 requires cities and counties to follow a streamlined local review process for particular housing projects if the city or county has failed to meet established goals for accommodating a fair share of new housing development, as identified in the City's Regional Housing Needs Assessment (RHNA). SB 35 requires cities and counties to streamline the review and approval of certain affordable housing projects by providing a ministerial process to approve such processes, thereby removing the requirement for CEQA review.

Under this process, a project applicant may request a streamlined review and a ministerial approval if a project meets specific eligibility criteria. Eligible projects include the following:

- **Urban Infill:** The project is located in an urban area with 75 percent of the site's perimeter already developed.
- **Number of Units:** The project includes at least two residential units.
- **Designated for Residential Uses:** General Plan and/or Zoning Classification that allows for residential or mixed-use development with at least two-thirds of the total square footage as residential.
- **Location:** The project cannot be located on a property that is within any of the following areas: coastal zone, prime farmland, wetlands, very high fire hazard severity zone, hazardous waste site, delineated earthquake fault zone, flood plain, floodway, community conservation plan area, habitat for protected species, under a conservation easement, or located on a qualifying mobile home site.
- **Demolition of Residential Units:** The development would not demolish any housing units that have been occupied by tenants in the last 10 years; are subject to rent or price control; or are subject to a covenant, ordinance, or law that restricts rents to affordable persons and facilities of moderate, low, and/or very low incomes.
- **Historic Buildings:** The project would not demolish a historic structure, as listed on a national, State, or local historic register.
- **Consistent with Objective Planning Standards:** The project meets all objective General Plan, Zoning, and Design Review standards in effect at the time an application is submitted. SB 35 defines objective standards as those that involve no personal or

subjective judgment by a public official and are verifiable by reference to an external benchmark or criterion.

- **P**revailing Wages: If the development is not in its entirety a public work, all construction workers shall be paid at least the general prevailing rate of per diem wages for the type of work and geographic area.

- **Skilled and Trained Workforce Provisions:** A skilled and trained workforce must complete the development if the project consists of 75 or more units that are not 100 percent subsidized affordable housing.

- **Subdivisions:** The project does not involve a subdivision subject to the California Subdivision Map Act, unless the project either receives a low-income housing tax credit and is subject to prevailing wages, or is subject to requirements to pay prevailing wages and to use a skilled and trained workforce.

- **Parking:** The project must provide at least one parking space per unit; however, a project may not be subject to parking requirements under the following conditions: (1) the project is located within a half mile of a public transit stop, (2) is located in an architecturally and historically significant historic district, (3) on-street parking permits are required, but are not offered to the development occupants, or (4) there is a car share vehicle located within one block of car share stations.

SB 35 also requires local jurisdictions to report more complete information about their progress in meeting housing goals to the California Department of Housing and Community Development.

Senate Bill 540. Senate Bill 540 (SB 540) allows local governments to create Workforce Housing Opportunity Zones, which are defined as areas within a city or county that are designated for expedited housing development. In order to create Workforce Housing Opportunity Zones, cities or counties must require that at least half of the housing units are affordable to households with low or moderate incomes. Within the zones, local governments must also complete environmental and planning reviews in advance so that individual housing projects subsequently proposed within the zones are not subject to project-specific reviews or environmental challenges. Qualified housing projects must also pay prevailing wages to construction workers. Local governments that create these zones may also apply for state grants or zero-interest loans to cover the costs of completing the needed planning and environmental review processes.

Assembly Bill 73. Assembly Bill 73 (AB 73) allows cities and counties to create Housing Sustainability Districts. These districts are similar to Workforce Housing Opportunity Zones in SB 540, but are different in that they must include at least 20 percent affordable units.

Regional Housing Needs Assessment. California General Plan Law (Government Code Section 65580 et seq.) requires each city and county to have land zoned to accommodate its fair share of the regional housing need. Housing unit construction goals are set by the California Department of Housing and Community Development and allocated to cities through regional planning agencies such as SCAG. This share for the SCAG region is known as the Regional

Housing Needs Assessment (RHNA). The RHNA is not a mandate to construct the full number of housing units for the region; rather, the RHNA allocation process establishes short-term construction needs and the fair distribution of housing needs among income groups.

The California Department of Housing and Community Development determined that the projected housing need for the Southern California region (including the Counties of Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial) is 438,030 new housing units for the 2014–2021 planning period.[1] SCAG allocated this projected growth to the various cities and unincorporated county areas in the SCAG region, creating the RHNA. The RHNA is divided into four income group categories: extremely/very low, low, moderate, and above moderate income.

Future housing needs refers to the proportion of the region's future housing needs allocated to a community. Each jurisdiction's future housing need is calculated in terms of four factors: (1) the number of units needed to accommodate forecasted global household growth; (2) the number of units needed to replace demolition due to attrition in the housing stock (i.e., fire damage, obsolescence, and conversion to non-housing uses); (3) maintenance of an ideal vacancy rate for a well-functioning housing market; and (4) an adjustment to avoid an overconcentration of lower-income households in any one jurisdiction.

As shown in Table 4.6.F, the City's fair share for the planning period between 2014 and 2021 (the last adopted RHNA period) was established by SCAG at 7,048 residential units. The RHNA target number was based on projected household growth and the resultant need for construction of additional housing units. This 7,048-residential-unit share was divided into five income groups according to median family income (MFI).

Table 4.6.F: City of Long Beach Regional Housing Need Allocation (2014–2021)

Income Group	Percentage of County AMI	RHNA 2014–2021 Housing Unit Allocation	Percentage of Total RHNA Allocation
Extremely	0–30	886	12%
Very Low	31–50	887	13%
Low	51–80	1,066	15%
Moderate	81–120	1,170	17%
Above Moderate	120+	3,039	43%
Total	**-**	**7,048**	**100%**

Source: City of Long Beach 2013–2021 Housing Element.
AMI = Area Median Income
RHNA = Regional Housing Need Allocation

As noted below, California State law requires local jurisdictions to update their General Plan Housing Element every 5 years due to the fact that housing needs are recognized as a statewide concern. Pursuant to State law, the Housing Element must identify the City's housing needs,

[1] California Department of Housing and Community Development, Division of Housing and Policy Development. Regional Housing Need Assessment Determination for the SCAG Region (August 17, 2011). Website: http://www.hcd.ca.gov/community-development/housing-element/docs/scag_5rhana081711.pdf (accessed January 31, 2019).

sites that can accommodate those needs, and policies to assure that the housing units necessary to meet those needs could be provided. Consistent with the RHNA requirements for 2014–2021, the City has updated its 2013–2021 General Plan Housing Element. For the 5th Update, the City is on a one-time 8-year cycle (2013–2021) and will return to a 5-year cycle in 2021 at the start of the 6th Update cycle.

In addition to identifying the need for new households at all income levels, the City completed an Affordable Housing analysis with data and direction provided by HUD, which determined that approximately 12.2 percent of all households in the City are experiencing overcrowding. Taking the total housing units identified in the 2010 Census as a baseline (176,032 units), this 12.2 percent rate resulted in a need for 21,476 new units to address overcrowding**.** As such, the City has combined the RHNA goal of providing 7,048 housing units with the needed 21,476 units to address overcrowding in the City, for a total of 28,524 housing units needed in the City (refer to Table 4.6.G below). As shown in Table 4.6.G, a total of 13,403 housing units are already accommodated in approved plans, leaving the need for an additional 15,121 housing units.

Table 4.6.G: Affordable Housing Analysis-Anticipated Housing Needs

Data Source	Number of Housing Units
Units Needed to Address 12.2 Percent 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***
Housing Units Required to be Facilitated by the Proposed LUE	**15,121**

Local and Regional Policies and Regulations.

Southern California Association of Governments. As previously stated, SCAG is a federally designated MPO)[1] representing six counties (Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles). The six-county SCAG planning area encompasses a population exceeding 18 million persons in an area of more than 38,000 square miles. The City and County of Los Angeles are located within the SCAG planning area. SCAG divides its six-county planning

[1] An MPO is a federally mandated and federally funded transportation policymaking organization in the United States that is made up of representatives from local governments and governmental transportation authorities. In 1962, the United States Congress passed legislation that required the formation of a Metropolitan Planning Organization for any urbanized area with a population greater than 50,000.

area into 15 subregions. The City is located within the Gateway Cities Council of Governments subregion.[1]

SCAG prepares several plans to address regional growth, including the Regional Comprehensive Plan, the Southern California Sustainability Planning Grant (formerly known as the Compass Growth Vision), the RHNA, the RTP, the RTP Program, and annual State of the Region reports to measure progress toward achieving regional planning goals and objectives.

SCAG's policy direction is guided by the 86-member official governing board known as the Regional Council. The Regional Council is composed of 67 districts that include an elected representative of one or more cities of approximately equal population levels that have a geographic community of interest (except the City of Long Beach, which has two representatives). Additionally, membership on SCAG's Regional Council includes one representative from each county's Board of Supervisors (except the County of Los Angeles, which has two representatives). SCAG's Regional Council also includes one representative of the Southern California Native American Tribal Governments. All members of the Los Angeles City Council are considered members of the SCAG Regional Council, and the Mayor of the City of Los Angeles serves as the Los Angeles City At-Large Representative.

SCAG's Regional Comprehensive Plan. In October 2008, SCAG adopted the Regional Comprehensive Plan (RCP) for the purpose of providing a comprehensive strategic plan for defining and solving housing, traffic, water, air quality, and other regional challenges. The 2008 RCP has two primary objectives in implementing this strategic plan: (1) integrating transportation, land use, and air quality planning approaches, and (2) outlining key roles for public and private sector stakeholders to implement reasonable policies regarding transportation, land use, and air quality approaches. While the 2008 RCP outlines several policies to inform local decision-makers within the SCAG region with respect to policy and planning decisions, these policies are considered recommendations and are not mandated by law.

With respect to land use policy, the 2008 RCP includes a Land Use and Housing Chapter that aims to link land use and transportation planning decisions to the projected population and economic growth in the SCAG region. Specifically, the Land Use and Housing Chapter of the 2008 RCP promotes sustainable planning for land use and housing in the SCAG region by maximizing the efficiency of the existing circulation network, providing a greater variety in housing types, promoting a diverse and growing economy, and protecting the existing natural environment. As previously stated, while the 2008 RCP identifies 2 Percent Strategy areas as part of the Compass Blueprint growth vision, these areas have since been updated and replaced by the High Quality Transit Areas (HQTAs) identified in the 2016–2040 RTP/SCS in an effort to implement the Sustainability Planning Grant Program.

SCAG's 2016–2040 RTP and Growth Forecasts. In April 2016, SCAG adopted the Final 2016–2040 RTP. The 2016–2040 RTP is meant to provide a common foundation for regional and local planning, policymaking, and infrastructure provision within the SCAG region as part of the RTP

[1] Gateway Cities Council of Governments. Gateway Cities Member Agency Contacts. Website: http:// http://www.gatewaycog.org/who-we-are/member-agency-contacts (accessed July 6, 2018).

formulation process, which is closely interlinked with the region's Sustainable Communities Strategy (SCS) and RHNA goals.

The 2016 RTP/SCS serves as a major planning document for regional transportation and land use decisions, and balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS is updated every four years as demographic, economic, and policy circumstances change.

The 2016–2040 RTP also includes a Demographics and Growth Forecast appendix that takes into account a combination of recent and past trends, reasonable technical assumptions, and local or regional growth policies in an effort to predict the most likely growth scenarios for the Southern California region in the future.

City of Long Beach General Plan 2013–2021 Housing Element. The City's Housing Element reflects the State's housing unit construction goals as allocated by SCAG in the RHNA for the years 2014 to 2021. The Housing Element analyzes current housing needs, estimates future housing needs, considers potential sites for additional housing, and establishes goals, policies, and programs in response to both current and future housing needs. The following housing goals and policies in the City's Housing Element are applicable to the proposed project.

Goal 1: Provide Housing Assistance and Preserve Publicly Assisted Units

Policy 1.6: Seek to preserve the existing stock of single room occupancy housing as a source of permanent, affordable housing. Work to identify additional SRO[1] housing opportunities.

Goal 2: Address the Unique Housing Needs of Special Needs Residents

Policy 2.4: Encourage universal design of housing products and environments, making them usable by a wide range of people with different physical and mental abilities.

Policy 2.5: Integrate and disperse special needs housing within the community and in close proximity to transit and public services.

Goal 3: Retain and Improve the Quality of Existing Housing and Neighborhoods

Policy 3.1: Encourage the maintenance and improvement of the housing stock and the neighborhood context.

Policy 3.2: Preserve and protect the character of established neighborhoods, with an emphasis on single-family neighborhoods and those beginning to decline.

Policy 3.4: Promote, where appropriate, the revitalization and/or rehabilitation of residential structures that are substandard or have fallen into disrepair.

[1] Single Room Occupancy

Policy 3.6: Continue to preserve and maintain the City's historical and architecturally significant buildings and neighborhoods by establishing and maintaining historic landmarks and districts.

Goal 4: Provide Increased Opportunities for the Construction of High Quality Housing

Policy 4.1: Provide adequate sites, zoned at the appropriate densities and development standards, to facilitate the housing production and affordability goals set forth in the 2014–2021 RHNA.

Policy 4.2: Encourage a balance of rental and homeownership opportunities, including high quality apartments, townhomes, condominiums, and single-family homes to accommodate the housing needs of all socioeconomic segments of the community, including large families.

Policy 4.5: Encourage residential development along transit corridors, in the downtown and close to employment, transportation, and activity centers; and encourage infill and mixed-use developments in designated districts.

Policy 4.8: Support the development of housing that is technology-friendly and designed to meet the housing needs of the emerging information and technology industry workforce.

Policy 4.10: Promote mixed-generation housing that accommodates both families and elderly households.

Goal 5: Mitigate Government Constraints to Housing Investment and Affordability

Policy 5.3: Utilize Planned Developments (PD), form-based zoning and other planning tools to allow flexible residential development standards in designated areas.

4.6.6 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on population, housing, and employment if it would:

Threshold 4.6.1: Induce substantial unplanned 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)

Threshold 4.6.2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

The proposed project is considered a policy/planning action and does not include any physical improvements that would displace housing or people; rather, the proposed project is a Land Use

plan that accommodates future growth already projected to occur in the City. In addition, current trends related to overcrowding indicate that population is likely to occur whether or not it is planned for in the planning area. The LUE reflects the City's long-term strategy for the location and distribution of growth with the intention of establishing PlaceTypes that would guide the location of new housing and places of employment throughout the City. The proposed LUE also places a particular emphasis on providing additional housing units required to alleviate overcrowding and meet RHNA goals.

Therefore, the proposed project would not result the displacement of substantial numbers of existing housing or people, necessitating the need for replacement housing elsewhere (Threshold 4.6.2). As a result, this threshold is not analyzed further in this Recirculated Draft EIR.

4.6.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures and would not include any project design features related to population and housing. Although there are no compliance measures and project design features related to population and housing, the LUE and UDE Goals, Strategies, and Policies are intended to reduce the impacts of future development envisioned under the proposed project.

4.6.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following Goals, Strategies, and Policies from the proposed LUE and UDE are applicable to the analysis of Population and Housing and would replace existing goals, strategies, and policies outlined in the City's existing LUE and Scenic Routes Element (SRE) (1975) following project approval:

Land Use Element (2018).

Goal No. 1: Implement Sustainable Planning and Development Practices

- **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.

Goal No. 2: Strengthen the City's Fiscal Health by Stimulating Continuous Economic Development and Job Growth

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-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.

- **LU-M-15:** Streamline permitting processes to help local businesses establish and grow.

- **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.

- **LU-M-19:** Continue to support and market the "shop local" campaign designed to encourage residents to spend locally.

- **LU-M-20:** Work with higher educational institutions on ways to attract identified employment sectors of emerging interest to students.

- **LU-M-59:** Attract renewable energy and green technology manufacturing companies to establish a presence/office in the City. Facilitate the creation of jobs in the renewable/clean energy sector.

- **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 the City.

- **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 3-6:** Foster home-based and incubator businesses.

Strategy No. 4: Attract and invest in green and innovative industries to expand creative employment opportunities.

- **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 6-11:** 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-sale revenue.

Goal No. 3: Accommodate Strategic Growth and Change

Strategy No. 7: Implement the major areas of change identified in [the] Land Use Plan (Map LU-20).

- **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 7-9:** Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.

- **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 the Southeast Area Specific Plan (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.

Goal No. 5: Diversify Housing Opportunities

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.

    - **LU-M-48:** Implement the Housing Element.

Urban Design Element (2018).

- **Policy UD 5-2:** Encourage provision of housing opportunities, 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.

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.

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.

Strategy No. 24: Protect and enhance established Industrial PlaceType.

- **Policy UD 24-2**: Protect and enhance viable industrial uses to retain job employment opportunities and job diversity.

4.6.8 Project Impacts

Threshold 4.6.1: Would the project induce substantial unplanned 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)?

Less than Significant Impact. The *State CEQA Guidelines* identify a project as growth inducing if it would foster economic or population growth or the construction of additional housing either directly or indirectly, in the surrounding environment (*State CEQA Guidelines,* Section 15126.2(e)). New employees of commercial or industrial development and new population from residential

development represent direct forms of growth. These direct forms of growth can have a secondary effect of expanding the size of local markets and inducing additional economic activity in the area. Direct employment impacts reflect the initial or first-round increases in jobs and wages that result from the creation of on-site jobs. Indirect impacts occurring as a consequence of the direct impacts, elsewhere within the project area, may result from the production of goods and services required to support the proposed on-site uses, and/or the production of goods and services required to meet consumer demand generated by wages paid to new employees.

A project could also indirectly induce growth by reducing or removing barriers to growth or by creating a condition that attracts additional population or new economic activity. According to the *State CEQA Guidelines,* Section 15126.2(e), "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Significant growth impacts could also occur if the project provides infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public utilities, or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

Construction. Construction associated with future projects would provide short-term construction jobs that would be temporary and/or seasonal. The workforce would include a variety of craftspeople, such as cement finishers, ironworkers, welders, carpenters, electricians, painters, and laborers. Generally, construction workers are only at a job site for the timeframe in which their specific skills are needed to complete that phase of construction. Although future construction activities would increase the number of employees in the planning area, it is expected that the local and regional construction workforce would be available to serve future construction needs. As such, construction workers would not be expected to relocate their household's place of residence as a consequence of working within the planning area. Therefore, construction activities associated with future projects facilitated by project approval would result in less than significant impacts associated with inducing substantial growth or demand for housing through increased construction employment, and no mitigation would be required.

Population. The City's population has grown over the past several decades. As identified in Table 4.6.A, the City's population is forecast to reach nearly 485,000 persons by 2040, an increase of 18,230 persons over the current population. The proposed project would allow for areas of focused change and the potential for increased intensity and density. Specifically, the anticipated General Plan build out scenario (2040) could result in the development of an additional 28,524 dwelling units by 2040.[1] Utilizing the DOF factor of 3.03 people per household,[2] these residential

[1] A total of 13,403 housing units are already accommodated in approved plans, leaving the need for an additional 15,121 housing units.

[2] State of California, Department of Finance (DOF). 2018. *E-5 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2017 and 2018.* Sacramento, California, May 2018 (accessed July 6, 2018).

uses would accommodate a population increase in the City of up to 86,427 people.[1] However, this projection assumes every additional resident would be a new citizen within the City. As previously stated, approximately 21,476 units are needed to accommodate large households (requiring three or more bedrooms) and alleviate overcrowding in the City. As such, the project-related increase in population represents an over-estimation of the projected population increase because it does not account for persons who are currently residing in overcrowded units in the City that would move to the newly-developed housing units facilitated by project approval. Furthermore, the average household size in Long Beach is currently smaller than the DOF factor (2.65 people per household, per the 2017 American Community Survey)[2]. As additional units are built in the City, the average household size is expected to decrease even further in conjunction with a reduction in the overcrowding rate as existing residents move into new units. This decrease, combined with an aging population (see Table 4.6.B) and City policies to address overcrowding are anticipated to result in a smaller average household size in the future, and a need for more housing units to accommodate the same number of total people. The proposed LUE seeks to mitigate these issues through various policies that will diversify the housing unit mix in the City, including encouraging residential development for all income levels and household types (Policies LU 12-1 and LU 12-2). Other adopted City policies also build on this goal, including Policy 4.2 in the Housing Element, which encourages a balance of housing opportunities to accommodate all socioeconomic segments of the community, including large families.

Housing Units. As previously noted, an additional 7,048 housing units are required to meet the City's 2014–2021 RHNA target. The City's 2013–2021 Housing Element was adopted as an amendment to the City's General Plan on January 7, 2014. The Housing Element contains policies designed to meet the housing needs of the City. State law requires that each jurisdiction evaluate its housing element every 5 years to determine its effectiveness in achieving City and State goals and objectives, and to adopt an Updated Housing Element that reflects the results of this evaluation. The Housing Element contains a detailed program to assure the adequate provision of housing for all economic segments of the City's population. Further, California Government Code requires that General Plans contain an integrated, consistent set of goals and policies. Therefore, the Housing Element is shaped by development policies contained in the Land Use Element, which establishes the location, type, intensity, and distribution of land uses in the City.

Implementation of the policies in the proposed LUE will achieve the goals outlined in the current Housing Element. Subsequent amendments to the General Plan will be reviewed to ensure consistency is maintained between future proposed General Plan Amendments and the updated Housing Element. Similarly, future updated Housing Elements and implementation of their policies will ensure that adequate housing opportunities are provided to all City residents. As identified in Section 4.4, Land Use and Planning, approval of the proposed project would ensure consistency with the City's General Plan and would establish new PlaceTypes in place of traditional land use designations established in the current LUE. As part of these proposed PlaceTypes, the project would allow for the increased intensity and density of mixed-use and residential uses in the City that would facilitate the future development of approximately 28,524 new housing units through the

[1] 3.03 people/household × 28,524 additional dwelling units = 86,247 additional people.

[2] U.S. Census Bureau, American Community Survey. 2017. 1-Year Estimates-Households and Family-City of Long Beach (Table S1101). Website: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk (accessed January 2, 2018).

year 2040. As described in the City's 2013–2021 Housing Element, the City is anticipated to develop 7,044 of its 7,048 housing unit RHNA requirement by the year 2021. As such, approval of the proposed project would further the City's objective in allowing for the construction of sufficient new housing equal to or in excess of the RHNA requirement for the 2013–2021 Housing Element.

As previously stated, the City would be required to provide a total of 28,524 new housing units to meet RHNA requirements and address housing overcrowding (reflected in Table 4.6.C). 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) (refer to Table 4.6.G).[1] Therefore, the City would be required to facilitate the development of 15,121 new housing units outside of these specific plan areas. As described further in Chapter 3.0, Project Description, and the Socioeconomic Growth Projections Memorandum (Appendix E), the proposed project accommodates growth envisioned under existing approved specific plans, and also facilitates growth in other areas throughout the City (with a particular emphasis on growth along major arterials and the Metro Blue Line and within the proposed Major Areas of Change). In total, the proposed project would allow for the development of 28,524 new units. Therefore, implementation of the proposed project would allow the City to meet State requirements to provide additional housing units at all income levels to address affordability and overcrowding. The City would also continue to implement the existing Housing Element policies and applicable City, Regional, and State regulations to reduce potential impacts associated with the provision of adequate housing to a less than significant level.

As previously stated, a project could indirectly induce growth at the local level by increasing the demand for additional goods and services associated with the increase in project population, thereby reducing or removing the barriers to growth. This can occur in areas where population growth results in an increased demand for service and commodity markets responding to the increased growth in population. However, this type of growth is a regional phenomenon resulting from the introduction of a major employment center or a significant housing project. Additional commercial uses may be drawn to the area by the increased number or residents as a result of the project; however, it is expected that any such development associated with the proposed project would occur consistent with planned growth in the City's General Plan.

The proposed project would allow for a significant increase in population, employment, and housing in the City of Long Beach through the horizon year 2040. With the exception of housing growth, this growth would be consistent with SCAG's regional growth forecasts for each of these areas for the same horizon year. However, much of the housing unit growth is expected to accommodate existing residents due to a combination of aging in place and overcrowded housing conditions. Therefore, the project's growth-inducing potential would be less than significant, as it would not foster growth in excess of what is already anticipated in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Further, because the proposed project would facilitate an increase in non-residential uses, the proposed project is anticipated to meet any increased demands for additional goods and services associated with the project-related increase in population.

[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).

The "jobs-to-housing ratio" measures the extent to which job opportunities in a given geographic area are sufficient to meet the employment needs of area residents. A sub-area of the region with a jobs-to-housing ratio that is lower than the standard of the region would be considered a "jobs poor" area, indicating that many of the residents must commute to places of employment outside of that sub-area. The projected 2040 jobs-to-housing ratios for the City, subregion (Los Angeles County), and SCAG region are 0.94, 1.32, and 1.33, respectively (Table 4.6.H). As the projected 2040 jobs-to-housing ratio for the City is lower than both the subregional and regional ratio, the City is prima facie "jobs poor," meaning it is projected that more residents will be required to commute outside the City for employment in 2040.

Table 4.6.H: Projected Future Jobs-to-Housing Ratios

Geographic Area	Employment in 2012/2015	Number of Housing Units in 2012/2015	2012/2015 Jobs-to-Housing Ratio	Employment in 2040	Number of Housing Units in 2040	2040 Jobs-to-Housing Ratio
City of Long Beach	153,154	163,794	0.94	181,665	192,318	0.94
Los Angeles County	4,463,000	3,285,400	1.36	5,226,000	3,946,000	1.32
SCAG Region	8,006,000	5,947,000	1.35	9,872,000	7,412,000	1.33

Source: City of Long Beach General Plan Draft Land Use Element (March 2018) (Appendix G); SCAG, Final 2016 RTP/SCS Growth Forecast.
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments

The jobs-to-housing ratio for the City does not account for the difference in projected growth rates between total population and employment. As previously stated, most of the housing unit growth is expected to accommodate existing residents due to a combination of aging in place and overcrowded housing conditions. Therefore, when looking at the current versus projected jobs-to-total-population ratio, the share of jobs is actually expected to increase. While the current jobs-to-total-population ratio in Long Beach and Los Angeles County is 0.33 and 0.44,[1] respectively, the gap between the City and County is projected to shrink by 2040 to 0.38 and 0.45, respectively. This will not only likely result in decreased commutes outside the City, but also reduced overcrowding and substandard living conditions for residents. Strategies within the LUE and other adopted policy documents, including the AFH, encourage increasing the number of high-wage jobs, affordable housing for low-wage workers, and housing for existing residents living in overcrowded and/or substandard conditions.

Additionally, the proposed project seeks to mitigate the existing jobs-to-housing imbalance in the City by providing expanded opportunities for commercial, mixed-use, and industrial development. Currently, the City has a lower jobs-to-housing ratio than both Los Angeles County and the SCAG region, at 0.94 jobs for every housing unit, versus 1.36 in the County and 1.35 in the SCAG area (jobs for every housing unit). The project addresses the dual need for additional high-wage jobs and housing affordable to low-wage workers in the City by expanding development opportunities for both office and residential uses at varying intensities/densities. In particular, the establishment of new land uses through innovative PlaceTypes, such as the Neo-Industrial PlaceType, encourages the

[1] City: 2012 employment of 153,154 jobs/ 2012 population of 466,255 = 0.33
County: 2015 employment of 4,463,000 jobs/ 2015 population of 10,159,000 = 0.44

creation and expansion of high-paying jobs accessible to workers formerly employed in the aerospace and manufacturing sectors. These two industries historically served as the economic engine for the City, but have seen their employment share decline in recent decades with deindustrialization and disinvestment from defense spending in Southern California. As the workforce for these industries is already located in and around Long Beach, new employment opportunities would not induce substantial population growth in the area, but rather would better serve the existing population. Achieving this greater balance of specific wage jobs and housing affordability is also anticipated to reduce vehicle miles traveled (VMT) consistent with the goals of the SCAG 2016-2040 RTP/SCS.

Employment. The extent to which the new jobs created by a project are filled by existing residents is a factor that tends to reduce the growth-related effect of a project. While the proposed project is considered a planning/policy action and does not include any physical improvements or projects at this time, future development facilitated by project approval would create a number of construction jobs that would be temporary or seasonal and specific to the variety of construction activities. This workforce would include a variety of craftspeople, such as grading equipment operators, cement finishers, ironworks, welders, carpenters, electricians, painters, and laborers. These short-term positions are anticipated to be filled by workers who, for the most part, reside in the project area. Therefore, construction of future projects facilitated by project approval will not generate a permanent increase in population within the project area.

Implementation of future projects facilitated by project approval would create a number of permanent jobs associated with new development, particularly within the Major Areas of Change. The new employment opportunities resulting from development of the proposed uses would maintain the City's current jobs-to-housing ratio by providing jobs to local residents. While the place of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs-to-housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or project area; therefore, no significant increase in population of the City is anticipated to result from the development or operation of future development facilitated by the proposed project.

The planning area encompasses the entire area within the City's jurisdictional limits. As such, the majority of areas proposed for new development under the LUE contain the necessary public utilities (water, recycled water, sewer, storm drainage, electrical, natural gas, and transportation services) to support future development envisioned under the proposed project. However, it should be noted that improvements to public utilities, including new water, sanitary sewer, and storm water services would be identified on a project-specific basis as new developments are proposed under the proposed LUE. Therefore, infrastructure improvements associated with future development facilitated by project approval would be sized appropriately for each project and would not be oversized to serve additional growth beyond that envisioned under the proposed LUE. Therefore, the proposed project would result in less than significant impacts with respect to the inducement of substantial unplanned population growth in an area, and no mitigation would be required.

4.6.9 Mitigation Measures

There are no potentially significant impacts related to housing, population, and employment, and no mitigation would be required.

4.6.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for population, housing, and employment. The cumulative study area used to assess potential cumulative population and housing impacts includes the City of Long Beach and the County of Los Angeles because employees in the planning area may live within or outside the City's jurisdictional boundaries.

As shown in Table 4.6.A, the City's population is anticipated to increase by 18,230 persons, and the City's employment is anticipated to increase by 28,511 jobs by 2040. Project-related increases in population and employment have been accounted for in SCAG's growth projections for the City. As demonstrated by growth projections outlined in SCAG's 2016–2040 RTP, demographic growth is anticipated to occur in the planning area regardless of the proposed LUE; however, the proposed LUE would affect the distribution of projected demographic growth. Therefore, the proposed project would not result in cumulative population or employment increases that would exceed projected regional forecasts for the City.

Approval of the proposed project would allow for the future development of a variety of uses, including industrial, residential, commercial, office, recreational, and mixed-uses. These uses would serve to provide a sound and diversified economic base and ample employment opportunities for the citizens of Long Beach. Furthermore, the proposed project will serve an existing demand for employment, while also meeting the cumulative demand of employment that will result from the City's projected future population. These increases for population, housing, and employment would be within the total projected growth forecasts for 2040, as established in the Final 2016–2040 RTP. In addition, implementation of the proposed project would be consistent with the City's vision for the community. Therefore, implementation of the proposed project would not result in a cumulatively significant population or housing impact and the future development facilitated by project approval would not significantly induce growth in areas where growth was not previously anticipated.

4.6.11 Level of Significance after Mitigation

There are no significant and unavoidable adverse impacts of the proposed project related to population, housing, and employment. No mitigation would be required.

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4.7 PUBLIC SERVICES

4.7.1 Introduction

This section describes the public services currently serving the planning area and evaluates the potential impacts of the Long Beach General Plan Land Use and Urban Design Elements Project (proposed project) on public services. This section is based on multiple data sources, including the Public Safety Element (1975) of the City of Long Beach (City) General Plan and the proposed General Plan Land Use and Urban Design Elements (March 2018) (Appendix H), as well as coordination with potentially affected public service providers. Specific references are identified within the subsection for each respective issue. This section addresses the following public services (service providers are noted in parenthesis):

- Fire Protection (City of Long Beach Fire Department [LBFD])
- Law Enforcement (City of Long Beach Police Department [LBPD])
- Public Schools (Long Beach Unified School District [LBUSD])
- Public Libraries (Long Beach Public Library [LBPL] System)

4.7.2 CEQA Baseline

Although the Notice of Preparation (NOP) was published in May 2015, the baseline for public services is considered to be 2018 when the analysis for the Recirculated Draft EIR was initiated. This provides an updated baseline that reflects current conditions related to public services at the time the Recirculated Draft EIR was prepared.

4.7.3 Methodology

The effects of the proposed Land Use Element (LUE) and Urban Design Element (UDE) are evaluated below to determine whether they would result in a significant adverse impact on the environment. The impact analysis presented in this section is based on the effect implementation of the proposed project would have on public services.

The discussion focuses on current levels of service provided to the project area and information on possible constraints or impacts to the facilities and/or services associated with the anticipated General Plan build out scenario (year 2040). Public service providers (e.g., LBFD, LBPD, LBUSD, and LBPL) were sent a questionnaire requesting information regarding current services provided to the planning area and information on possible constraints or impacts to their services associated with the anticipated General Plan build out scenario (year 2040). The impact analyses are based on responses to the questionnaires, information obtained through subsequent phone conversations with public service representatives, and/or data obtained through websites. Correspondence with public service providers is included in Appendix F.

4.7.4 Existing Environmental Setting

4.7.4.1 Fire Protection

The 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. The LBFD is divided into the bureaus of Operations, Fire Prevention, Support Services, and Administration. Each bureau is further divided into sections that report to the Fire Chief. The LBFD has a total of 531 full time equivalent (FTE) uniformed and non-uniformed personnel.[1]

The LBFD currently protects over 478,561[2] residents from its 24 fire stations located throughout the City, the Beach Operations headquarters, and the LBFD headquarters.[3]

The planning area includes the entire area within the City's jurisdictional limits (approximately 50 square miles). As such, all 24 stations, the nine lifeguard facilities, and the related training centers and headquarters would serve the planning area.

According to the City's *Fiscal Year 2019 Adopted Budget,* it is the stated goal of the LBFD to respond to structure fire calls within 6 minutes and 20 seconds or less.[4] 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).[5] The City's Fiscal Year (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). The FY 2019 budget also includes a new HEART (Homeless Education and Response Team) unit.

Currently, LBFD is planning the development of two new fire stations (Station No. 15 and Station No. 20). Both stations will be located within the City's Port Complex, at Pier F Berth 202 and 401 Pier D Avenue, respectively. Staffing would be consistent with current LBFD staffing levels. In 2019, Station No. 17, located at 2241 Argonne Avenue, is tentatively scheduled to expand staffing by adding an Engine Company, which would be comprised of 4 FTE positions. Additionally, 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, LBFD is actively researching options to expand the footprint of its Fire Headquarters, located at 3205 Lakewood Boulevard.

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1 Long Beach Fire Department (LBFD). Correspondence with Matthew Gruneisen, LBFD Deputy Chief, Fire Prevention, dated October 31, 2018.

2 State of California, Department of Finance (DOF). 2018. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2017 and 2018.* Sacramento, California, May 2018 (accessed July 6, 2018).

3 City of Long Beach Fire Department (LBFD). Station Locations. Website: http://www.longbeach.gov/fire/about-us/station-locations/ (accessed September 4, 2018).

4 City of Long Beach. 2018. Fiscal Year 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).

5 Ibid.

Currently, there are not enough workstations for LBFD staff.[1]

4.7.4.2 Police Protection

The LBPD provides local police protection services to the City, and the LBPD consists of five separate bureaus: (1) the Investigation Bureau, (2) the Support Bureau, (3) the Patrol Bureau, (4) the Administration Bureau, and (5) the Financial Bureau.[2] The Investigation Bureau consists of the Detective Division, the Gang and Violent Crimes Division, the Forensic Science Services Division, and the Criminal Intelligence Division; the 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; the 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; the Patrol Bureau is responsible for providing community-policing services. The Administrative Bureau consists of the Personnel, Records, and Technology Divisions; the 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. The Financial Bureau consists of the Fiscal Division and is responsible for payments, billings, the annual budget, and performing financial analyses for the police department.

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.[3] 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.

The LBPD FY 2019 budget accounts for approximately 1,241 FTEs.[4] The LBPD currently has a service ratio of 1.8 sworn officers per 1,000 residents.[5] Currently, the LBPD does not have plans to expand

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1 LBFD. Correspondence with Matthew Gruneisen, LBFD Deputy Chief, Fire Prevention, dated October 31, 2018.

2 City of Long Beach Police Department (LBPD). Correspondence with Rico Fernandez, LBPD Sergeant, dated November 15, 2018.

3 City of Long Beach. Fiscal Year 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.

5 LBPD. Correspondence with Rico Fernandez, LBPD Sergeant, dated November 15, 2018.

facilities, services, or staff. Additional expansion may be determined when the FY 2020 budget is developed, which is tentatively scheduled for mid- to late-2019.[1]

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 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).

4.7.4.3 Public Schools

The provision of education and school facilities in the City is the responsibility of the LBUSD, which is currently the third largest school district in the State[2] and serves approximately 75,000 students in 87 schools in the Cities of Long Beach, Carson, Lakewood, Signal Hill, and Avalon (on Catalina Island). Table 4.7.A provides a list of schools served by LBUSD.

Table 4.7.A: LBUSD Schools

School Name	Address
Elementary Schools (Kindergarten through 5th Grade)	
Jane Addams Elementary School	256 E Plymouth Street, Long Beach, CA 90805
Alvarado Elementary School	*1900 E 21st Street, Signal Hill, CA 90755*
Avalon Elementary School	*200 Falls Canyon Road, Avalon, CA 90704*
Barton Elementary School	1100 E Del Amo Boulevard, Long Beach, CA 90807
Birney Elementary School	710 W Spring Street, Long Beach, CA 90806
Bixby Elementary School	5251 E Stearns Street, Long Beach, CA 90815
Bryant Elementary School	4101 E Fountain Street, Long Beach, CA 90804
Luther Burbank Elementary School	501 Junipero Avenue, Long Beach, CA 90814
Burcham Elementary School	5610 E Monlaco Road, Long Beach, CA 90808
George Washington Carver Elementary School	5335 E Pavo Street, Long Beach, CA 90808
Cesar Chavez Elementary School	730 W 3rd Street, Long Beach, CA 90802
Cleveland Elementary School	*4760 Hackett Avenue, Lakewood, CA 90713*
Dooley Elementary School	5075 Long Beach Boulevard, Long Beach, CA 90805
Edison Elementary School	625 Maine Avenue, Long Beach, CA 90802
Emerson Parkside Academy	2625 Josie Avenue, Long Beach, CA 90815
Fremont Elementary School	4000 E 4th Street, Long Beach, CA 90814
Minnie Gant Elementary School	1854 N Britton Drive, Long Beach, CA 90815
James A. Garfield Elementary School	2240 Baltic Avenue, Long Beach, CA 90810

[1] LBPD. Correspondence with Rico Fernandez, LBPD Sergeant, dated November 15, 2018.

[2] Long Beach Unified School District (LBUSD). Website: http://www.lbschools.net/District/ (accessed July 30, 2018).

Table 4.7.A: LBUSD Schools

School Name	Address
Grant Elementary School	1225 E 64th Street, Long Beach, CA 90805
Harte Elementary School	1671 E Phillips Street, Long Beach, CA 90805
Patrick Henry Elementary School	3720 Canehill Avenue, Long Beach, CA 90808
Olivia Herrera Elementary School	1620 Temple Avenue, Long Beach, CA 90804
Holmes Elementary School	*5020 Barlin Avenue, Lakewood, CA 90712*
Charles F. Kettering Elementary School	550 Silvera Avenue, Long Beach, CA 90803
Starr King Elementary School	145 E Artesia Boulevard, Long Beach, CA 90805
Lafayette Elementary School	2445 Chestnut Avenue, Long Beach, CA 90806
Lincoln Elementary School	1175 E 11th Street, Long Beach, CA 90813
Longfellow Elementary School	3800 Olive Avenue, Long Beach, CA 90807
Los Cerritos Elementary School	515 W San Antonio Drive, Long Beach, CA 90807
Lowell Elementary School	5201 E Broadway, Long Beach, CA 90803
MacArthur Elementary School	*6011 Centralia Street, Lakewood, CA 90713*
Madison Elementary School	*2801 Bomberry Street, Lakewood, CA 90712*
Mann Elementary School	257 Coronado Avenue, Long Beach, CA 90803
McKinley Elementary School	6822 Paramount Boulevard, Long Beach, CA, 90805
Naples Elementary School	5537 E The Toledo, Long Beach, CA 90803
Oropeza Elementary School	700 Locust Avenue, Long Beach, CA 90813
Prisk Elementary School	2375 Fanwood Avenue, Long Beach, CA 90815
Riley Elementary School	*3319 Sandwood Street, Lakewood, CA 90712*
Roosevelt Elementary School	1574 Linden Avenue, Long Beach, CA 90813
Signal Hill Elementary School	*2285 Walnut Avenue, Signal Hill, CA 90755*
Bobbie Smith Elementary School	565 E Hill Street, Long Beach, CA 90806
Stevenson Elementary School	515 Lime Avenue, Long Beach, CA 90802
Twain Elementary School	5021 E Centralia Street, Long Beach, CA 90808
Webster Elementary School	1755 W 32nd Way, Long Beach, CA 90810
Whittier Elementary School	1761 Walnut Avenue, Long Beach, CA 90813
Willard Elementary School	1055 Freeman Avenue, Long Beach, CA 90804
K–8 Schools (Kindergarten through 8th Grade)	
Cubberley K–8 School	3200 Monogram Avenue, Long Beach, CA 90808
Gompers K–8 School	*5206 Briercrest Avenue, Lakewood, CA 90713*
Elizabeth Hudson K–8 School	2335 Webster Avenue, Long Beach, CA 90810
John Muir Academy	3038 Delta Avenue, Long Beach, CA 90810
Newcomb Academy	3351 Val Verde Avenue, Long Beach, CA 90808
Colin Powell Academy	150 W Victoria Street, Long Beach, CA 90805
Jackie Robinson Academy	2750 Pine Avenue, Long Beach, CA 90806
Tincher Preparatory School	1701 Petaluma Avenue, Long Beach, CA 90815
Middle Schools (6th through 8th Grade)	
Avalon Middle School	*200 Falls Canyon Road, Avalon, CA 90704*
Bancroft Middle School	5301 E Centralia Street, Long Beach, CA 90808
Franklin Classical Middle School	540 Cerritos Avenue, Long Beach, CA 90802
Hamilton Middle School	1060 70th Street, Long Beach, CA 90805
Hoover Middle School	*3501 Country Club Drive, Lakewood, CA 90712*
Hughes Middle School	3846 California Avenue, Long Beach, CA 90807
Thomas Jefferson Middle School	750 Euclid Avenue, Long Beach, CA 90804
Helen Keller Middle School	7020 E Brittain Street, Long Beach, CA 90808
Lindbergh Middle School	1022 East Market Street, Long Beach, CA 90805
Perry Lindsey Middle School	5075 Daisy Avenue, Long Beach, CA 90805
John Marshall Middle School	5870 E Wardlow Road, Long Beach, CA 90808

Table 4.7.A: LBUSD Schools

School Name	Address
Jessie Elwin Nelson Middle School	*1951 Cherry Avenue, Signal Hill, CA 90755*
Will Rogers Middle School	365 Monrovia Avenue, Long Beach, CA 90803
Stanford Middle School	5871 E Los Arcos Street, Long Beach, CA 90815
Stephens Middle School	1830 W Columbia Street, Long Beach, CA 90810
George Washington Middle School	1450 Cedar Avenue, Long Beach, CA 90813
High Schools (9th through 12th Grade)	
Avalon High School	*200 Falls Canyon Road, Avalon, CA 90704*
Beach High School	3701 E Willow Street, Long Beach, CA 90815
Richard D. Browning High School	2180 Obispo Avenue, Long Beach, CA 90804
Juan Rodriguez Cabrillo High School	2001 Santa Fe Avenue, Long Beach, CA 90810
California Academy for Mathematics and Science	*1000 E Victoria Street, Carson, CA 90747*
Jordan High School	6500 Atlantic Avenue, Long Beach, CA 90805
Lakewood High School	*4400 Briercrest Avenue, Lakewood, CA 90713*
Ernest McBride High School	7025 Parkcrest Street, Long Beach, CA 90808
Robert A. Millikan High School	2800 Snowden Avenue, Long Beach, CA 90815
Polytechnic High School	1600 Atlantic Avenue, Long Beach, CA 90813
PAAL Academy	1545 Long Beach Boulevard, Long Beach, CA 90813
Will J. Reid High School	2153 W Hill Street, Long Beach, CA 90810
Renaissance High School For The Arts	235 E 8th Street, Long Beach, CA 90813
Sato Academy of Mathematics and Science	1100 Iroquois Avenue, Long Beach, CA 90815
Woodrow Wilson High School	4400 E 10th Street, Long Beach, CA 90804
Charter Schools	
Clear Passage Educational Center	1471 Martin Luther King Jr Avenue, Long Beach, CA 90813
Intellectual Virtues Academy	3601 Linden Avenue, Long Beach, CA 90807

Source: LBUSD. District Map. Website: http://www.lbschools.net/Asset/Files/District/LBUSD-District-Map.pdf (accessed October 4, 2018).
Note: *Italicized* text indicates schools that are located outside of the City.
LBUSD = Long Beach Unified School District

During the 2017–2018 school year, the LBUSD accommodated a total of 74,576 students in its elementary, middle, and high schools. A breakdown of the most current enrollment and capacities available within the LBUSD are shown in Table 4.7.B.

Table 4.7.B: LBUSD Capacity and Student Enrollment (2017–2018)

School Level	Facilities Capacity	Existing Enrollment in LBUSD	Excess/(Shortage) Capacity
Elementary Schools (Grades K–6)	44,779	40,139	4,460
Middle Schools (Grades 7–8)	13,776	11,273	2,503
High Schools (Grades 9–12)	23,750	23,164	586
Total	**82,305**	**74,576**	**7,729**

Source: LBUSD. *School Facilities Needs Analysis,* Table 6 (February 2018).
Note: LBUSD operates elementary schools that serve Kindergarten through 5th grade and middle schools that serve 6th through 8th grade. LBUSD's school level configuration was altered in the source to compare capacity and enrollment consistent with Office of Public School Construction SAB Form 50-02.
K = Kindergarten
LBUSD = Long Beach Unified School District
SAB = State Allocation Board

Collectively, the LBUSD's school facilities in the 2017–2018 school year had a capacity of 82,305 seats per Section 17071.25 of the Education Code.[1] Of these 82,305 seats, 44,779 were at the elementary school level, 13,776 were at the middle school level, and 23,750 were at the high school level. These capacities included seats from all new school facility construction projects funded by the State. As shown in Table 4.7.B, student enrollment was below the facilities capacity at each school level during the 2017–2018 school year.

The LBUSD overall budget of $893 million consists of the combined expenditure plans for ten separate funds.[2] 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).[3]

4.7.4.4 Public Libraries

The LBPL system provides library services to the City and includes 12 branch locations throughout the City.[4] 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 237,695 square feet (sf) of library facilities, approximately 798,760 library materials (includes hardcopies and online resources), and approximately 296 computers available for public use (total computers include 261 with internet access and 35 with catalog access only). In FY 2019, the City's Library Services proposes 128.09 FTE personnel.[5] Table 4.7.C details specific information such as library size, population served, and specific collection items for each library within the LBPL system.

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).[6] Library hours are subject to change.

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1 Section 17071.25 of the California Education Code outlines a four-part methodology for calculating the total school building capacity in any given school district. For further details related to this methodology, see website: https://law.justia.com/codes/california/2016/code-edc/title-1/division-1/part-10/chapter - 12.5/ article-2/section-17071.25 (accessed October 25, 2018).

2 Long Beach Unified School District (LBUSD). Website: http://www.lbschools.net/District/ (accessed July 30, 2018).

3 LBUSD. 2018. *2018–2019 Adopted Budget.* Website: http://www.lbschools.net/Asset/Files/BusinessServices/Financial/2018-19-Final-Budget-for-Web-062218.pdf (accessed July 30, 2018).

4 Long Beach Public Library (LBPL). Website: Library Locations, http://www.lbpl.org/locations/library_locations.asp (accessed July 30, 2018).

5 City of Long Beach. Fiscal Year 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).

6 LBPL. Library Hours. Website: http://www.lbpl.org/locations/library_hours.asp (accessed July 30, 2018).

Table 4.7.C: Long Beach Public Library Statistics

Library	Year Built	Council	Library Population Served	Schools Served	Hours Open per Week	Items Circulated Annually	Reference Questions Answered Annually	Staff FTE	No. of Volumes	Square Feet
Main[1]	1977	2	491,564	6	35	121,376	85,201	69.02	279,436	135,000
Alamitos	1929	2	53,536	3	34	39,988	7,885	3.85	32,377	7,475
Bay Shore	1959	3	26,693	4	38	71,396	44,565	3.85	44,231	6,900
Brewitt	1948	4	32,577	8	34	51,390	22,890	3.85	35,339	5,225
Los Altos	1957	4	39,296	11	34	84,452	17,145	3.85	42,242	6,750
Ruth Bach	1958	5	32,054	16	34	79,684	15,450	3.85	45,539	7,000
El Dorado	1970	5	20,055	11	34	135,611	22,355	5.75	60,687	8,160
Burnett	1969	6	47,802	9	38	40,276	35,060	4.25	39,972	7,500
Mark Twain	2007	6	57,433	5	34	73,890	31,060	6.52	67,554	16,000
Dana	1958	7	41,791	8	34	77,398	13,403	3.85	41,844	6,800
Bret Harte	1957	7	35,879	9	34	38,238	12,610	4.75	40,977	6,500
Michelle Obama[2]	2015	9	95,000	17	38	133,204	130,775	12.22	62,013	24,655
Total	-	-	-	-	-	**946,903**	**438,399**	**125.61**	**792,211**	**237,695**

Sources: LBPL. Facts and Figures. Website. http://www.lbpl.org/info/about/facts_and_figures.asp (accessed July 30, 2018). LBPL, correspondence with Amber Ahlo, LBPL Administrative Officer, dated November 5, 2018.

[1] A new main library is under construction within the Civic Center and is slated to open in 2019, replacing the existing Main Library. Although it will be slightly smaller at 93,000 square feet, it will not only contain all of the services provided in the existing Library in a spatially and operationally more efficient building, but it will also include new features, such as high-end multimedia work stations, group study rooms, increased access to library services and materials for the disabled population through an ICPD, updated and age-appropriate children's spaces, and more.

[2] Michelle Obama Neighborhood Library. Website: http://www.lbpl.org/locations/michelle_obama/default.asp (accessed September 1, 2018).

FTE = full time equivalent
ICPD = Information Center for People with Disabilities
LBPL = Long Beach Public Library

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.[1] Using this standard and 478,561 as the estimated 2018 population with a total citywide library square footage of 237,695, the LBPL currently provides approximately 0.50 sf per capita; according to the service standard, this represents a surplus of library space by 0.05 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] 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. Source: City of Long Beach. FY 2007 Adopted Budget. Library Services. Website: http://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/fy-07-adopted-budget-webpage/library-services-fy-07-adop (accessed October 25, 2018).

4.7.5 Regulatory Setting

4.7.5.1 Federal Policies and Regulations.

International Fire Code. The International Fire Code (IFC) regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes. The IFC includes general and specialized technical fire and life safety regulations addressing fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, use and storage of hazardous materials, protection of emergency responders, industrial processes, and many other topics.

4.7.5.2 State Policies and Regulations.

California Health and Safety Code. Sections 13000 et seq. of the California Health and Safety Code include fire regulations for building standards (also contained in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Fire Code. The California Fire Code (CFC; California Code of Regulations Title 24, Part 9) sets forth requirements including emergency access, emergency egress routes, interior and exterior design and materials, fire safety features including sprinklers, and hazardous materials. The CFC is issued on a 3-year cycle; the 2016 Edition (the most recent version, which took effect January 1, 2016) of the CFC is adopted and incorporated by reference in Chapter 18.48 (Fire Code) of the City's Municipal Code.

California State Assembly Bill 2926: School Facilities Act of 1986. To assist in providing school facilities to serve students generated by new development, Assembly Bill (AB) 2926 was enacted in 1986 and authorizes a levy of impact fees on new residential and commercial/industrial development. The bill was expanded and revised in 1987 through the passage of AB 1600, which added Sections 66000 et seq. to the Government Code. Under this statute, payment of impact fees by developers serves as California Environmental Quality Act (CEQA) mitigation to satisfy the impact of development on school facilities.

California Senate Bill 50. Senate Bill (SB) 50, passed in 1998, provides a comprehensive school facilities financing and reform program and enables a statewide bond issue to be placed on the ballot. Under the provisions of SB 50, school districts are authorized to collect fees to offset the costs associated with increasing school capacity as a result of development and related population increases. The funding goes toward acquiring school sites, constructing new school facilities, and modernizing existing school facilities. SB 50 establishes a process for determining fee amounts charged to developers to mitigate the development impacts on school districts from increased enrollment. According to Section 65996 of the California Government Code, development fees authorized by SB 50 are deemed to be "full and complete school facilities mitigation."

Under this legislation, there are three levels of developer fees that may be imposed upon new development by the governing school district. Level I fees are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level II fees require the developer to provide one-half of the cost of accommodating students in new schools, and the State provides the remaining half. To qualify for Level II fees, the board of the governing

school district must adopt a School Facilities Needs Analysis and meet other prerequisites in accordance with Section 65995.6 of the California Government Code. Level III fees apply if the State runs out of bond funds, allowing the governing school district to impose 100 percent of the cost of the school facility or mitigation, minus any local dedicated school monies, on the developer.

4.7.5.3 Local Policies and Regulations.

City of Long Beach Municipal Code. The following provisions from the City's Municipal Code focus on public services impacts associated with new development projects and are relevant to the proposed project:

Chapter 18.22 (Police Facilities Impact Fees). This chapter sets forth fees that are imposed on residential and nonresidential development for the purpose of assuring that impacts created by new development be offset by payment of its fair share of costs required to support needed police facilities and related costs necessary to accommodate such development.

Chapter 18.23 (Fire Facilities Impact Fees). This chapter sets forth the fees that are imposed on residential and nonresidential development for the purpose of assuring that impacts created by new development be offset by payment of its fair share of the costs required to support needed fire facilities and related costs necessary to accommodate such development. The funds are to be utilized for payment of the actual or estimated costs of fire facilities, apparatuses, and equipment related to new residential and nonresidential construction.

Chapter 18.48 (Fire Code). This chapter formally adopts the 2013 Edition of the California Fire Code (CFC), excluding sections, chapters, or appendices pursuant to Section 18.48.040. The CFC sets forth requirements including emergency access, emergency egress routes, interior and exterior design and materials, fire safety features including sprinklers, and hazardous materials.

City of Long Beach Proposition H. The Police and Fire Public Safety Oil Production Act Fund, Proposition H, was established to provide dedicated funds for police and fire services by assessing a special production tax on oil producers in Long Beach. The special tax proceeds support police and fire responses to public safety needs. As of July 1, 2018, the tax rate was $0.30 per barrel.[1]

City of Long Beach General Plan. The following public safety goals and recommendations are included in the Public Safety Element of the City General Plan (1975) and are applicable to the proposed project as they relate to the police and fire protection required for existing and proposed land uses. The following goals and recommendations are applicable to the proposed project.

Development Goal 1. *Promote the redevelopment of areas which may present safety problems.*

Development Goal 2. *Utilize safety considerations as a means of encouraging and enhancing desired land use patterns.*

[1] City of Long Beach. 2018. *Police and Fire Public Safety Oil Production Act Fund Summary. FY 19 Proposed Budget*. July.

Development Goal 6. *Encourage transportation systems, utilities, industries, and similar uses to locate and operate in a manner consistent with public safety goals.*

Development Goal 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).*

4.7.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on public services providers if it would:

Threshold 4.7.1 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *fire protection;*

Threshold 4.7.2 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *police protection;*

Threshold 4.7.3 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *public schools;*

Threshold 4.7.4 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *parks*; or

Threshold 4.7.5 Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 other public facilities.*

Approval of the proposed project is considered a policy/planning action for the entire City and does not include any physical improvements. However, the LUE proposes the inclusion of the Open Space PlaceType, which provides for the preservation of land that supports recreational open space (e.g., 2,750 acres in the City that are used for recreation); has distinctive scenic, natural, or cultural features; contributes to community character and form; and provides for utilities and/or infrastructure or that contains environmentally sensitive resources. Therefore, the proposed project would result in less than significant impacts related to potential adverse physical impacts for parks (Threshold 4.7.4). As a result, this threshold is not analyzed further in this Recirculated Draft EIR. For further information regarding Threshold 4.7.4, refer to the Initial Study (provided in Appendix A).

4.7.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures and would not include any project design features related to public services. Although there are no compliance measures and project design features related to public services, the LUE and UDE Goals, Strategies, and Policies are intended to reduce the impacts of future development envisioned under the proposed project.

4.7.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following proposed Goals, Strategies, and Policies are applicable to the analysis of Public Services and would replace existing goals, strategies, and policies outlined in the City's existing LUE and SRE following project approval:

Land Use Element.

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 16-1: Identify areas and populations of the City that are exposed to unsafe levels of environmental pollutants.

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 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-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.

Urban Design Element (2018).

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 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.

4.7.8 Project Impacts

Threshold 4.7.1 Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *fire protection*?

Less than Significant Impact.

Construction. The planning area is not located within a Fire Hazard Severity Zone according to the Statewide CalFire Map for the Los Angeles Region.[1] Future construction activities are anticipated to be temporary in nature and would minimally increase the demand for fire protection services as compared to the anticipated General Plan build out scenario (2040). Although lane closures would be necessary to accommodate utility improvements and roadway closures associated with future projects, individual project applicants would be required to maintain adequate access for emergency vehicles traveling to and from future construction sites. In addition, construction activities associated with future individual projects resulting from project approval would be subject to a separate environmental review process on a project-specific basis in accordance with CEQA and the *State CEQA Guidelines*. Therefore, construction activities associated with implementation of the proposed project would not result in impacts to fire services, and no mitigation would be required.

Operation. The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the typical range of fire protection service calls within the City. As noted in Section 4.6, Population and Housing, implementation of the proposed project could result in the development of approximately 28,524 dwelling units and the addition of approximately 18,230 persons by year 2040. The estimated City population associated with the anticipated General Plan build out scenario (year 2040) would be approximately 484,485. In correspondence dated October 31, 2018, LBFD personnel indicated that an increase in population as

[1] California Department of Forestry and Fire Protection (CalFire). Website: http://frap.fire.ca.gov/webdata/maps/los_angeles/fhszs_map.19.pdf (accessed October 15, 2018).

a result of project implementation would strain the existing system and negatively impact the call volume, response times, and LBFD resources.[1] As a result of the increased population, overall demands for fire protection services and emergency services in the City would increase. Consequently, additional LBFD resources (including staffing) would be required to provide fire protection for new residents, workers, and structures. The City's costs to maintain facilities and equipment as well as train and equip personnel would also increase. In addition, the redistribution and increase of the population and traffic density into areas proposed for growth, such as the Downtown area, could necessitate the reorganization of fire protection resources. The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development. Additionally, future development allowed under the proposed project would occur within the limits of the City, already served by the LBFD; therefore, the proposed project would not result in an expansion of the LBFD service area.

Future projects would be reviewed by the City of Long Beach on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted fire facilities impact fees. Per Chapter 18.23 (Fire Facilities Impact Fees) of the City's Municipal Code, the LBFD receives funding from Fire Facilities Impact fees, which are charged on all new residential and nonresidential development. These fees are calculated per dwelling unit or square footage, as detailed in Table 4.7.D, Fire Facilities Impact Fees (effective October 1, 2018). The funds obtained from the fire facilities impact fees are required to be used to fund costs of providing additional fire services necessary to accommodate such development. The LBFD would also continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's General Fund; the City's Tidelands operation revenue; and other revenue sources such as paramedic fees, fire building plan and building check fees, various State and federal grants, and private donations. The additional personnel, building, and materials costs for fire services in the City required due to increased demand from future development accommodated by the proposed project would be offset through these revenue sources. Therefore, sufficient revenue would be available for necessary improvements to provide for adequate fire facilities, equipment, and personnel associated with the anticipated General Plan build out scenario (year 2040). As the proposed project is implemented, these fees would allow LBFD to maintain appropriate firefighter staffing to ensure compliance with adopted standards for response time and coverage.

All future projects facilitated by the proposed LUE and UDE would also be required to comply with all applicable building code requirements requiring fire protection devices, such as sprinklers and alarms per Municipal Code Section 18.48.010 (Adoption of the 2013 California Fire Code), adequately spaced fire hydrants, and fire access lanes. Adherence to applicable codes would ensure adequate facilities to provide for fire protection services meeting or exceeding established performance objectives and ensure that there is adequate emergency access on site. In addition, if construction impacts of a development project necessitate the closure of roadways that serve a particular project, the applicant would be required to coordinate road closures and emergency access with LBFD to ensure that fire protection services meet the adopted performance objectives.

[1] Long Beach Fire Department (LBFD). Correspondence with Matthew Gruneisen, LBFD Deputy Chief, Fire Prevention, dated October 31, 2018.

Table 4.7.D: Fire Facilities Impact Fees

Land Use Type	Fee
Residential	
Single-Family	$496/dwelling unit
Multi-Family	$378/dwelling unit
Accessory Dwelling Units	$241.74/dwelling unit
Non-Residential:	
Commercial	$0.267/sf
Office	$0.325/sf
Industrial	$0.132/sf

Source: City of Long Beach Developer Fees (updated May 15, 2018, effective October 1, 2018). Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2506 (accessed July 30, 2018).
sf = square foot/feet

As described in the proposed LUE, fire and police stations are two of the preferred land uses within the designated Founding and Contemporary Neighborhoods, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors – Low and Moderate, Transit-Oriented Development – Low and Moderate, and Industrial PlaceTypes. As stated previously, LBFD is planning the development of two new fire stations (Station No. 15 and Station No. 20) and the expansion of one fire station (Station No. 17). The proposed PlaceType designations would permit the future development and operation of new stations within these PlaceTypes. The proposed project permits development of new stations, proposes no physical improvements, and requires all future projects to assess project impacts on fire protection services. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection. Project impacts related to fire protection would be less than significant, and no mitigation would be required.

Threshold 4.7.2: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *police protection*?

Less than Significant Impact.

Construction. Future construction activities are anticipated to be temporary in nature and would minimally increase the demand for police protection services as compared to the anticipated General Plan build out scenario (2040). Although lane closures would be necessary to accommodate utility improvements and roadway closures associated with future projects, individual project applicants would be required to maintain adequate access for emergency vehicles traveling to and from future construction sites. In addition, construction activities associated with future individual projects resulting from project approval would be subject to a separate environmental review process on a project-specific basis in accordance with CEQA and the *State CEQA Guidelines*.

Therefore, construction activities associated with implementation of the proposed project would not result in impacts to police services, and no mitigation would be required.

Operation. The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the typical range of police service calls within the City. As previously identified, implementation of the proposed project could result in the development of approximately 28,524 dwelling units and the addition of approximately 18,230 persons by 2040. The estimated City population associated with the anticipated General Plan build out scenario (year 2040) would be 484,485. As a result of the increased population and employment in the City, the number of police service calls, patrols, and staff necessary to service the City would also increase.

As stated previously, the LBPD does not currently have plans to expand facilities, services, or staff. However, to serve future growth, new and/or additional police resources would be needed to prevent an impact to service ratios. The City's costs to maintain facilities and equipment as well as train and equip personnel would also increase. In addition, the redistribution and increase of the population and traffic density into areas proposed for growth, such as the Downtown area, could necessitate the reorganization of police resources. The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development.

Future projects would be reviewed by the City of Long Beach on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted police facilities impact fees. Per Chapter 18.22 (Police Facilities Impact Fees) of the City's Municipal Code, the LBPD receives funding from police facilities impact fees, which are charged on all new residential and non-residential development. These fees are calculated per dwelling unit or square footage, as detailed in Table 4.7.E (effective October 1, 2018). The funds obtained from the police facilities impact fees are required to be used to fund costs of providing additional police services attributed to new development, including the acquisition, construction, and furnishing of new law enforcement facilities, the purchasing of equipment and vehicles, and the funding of a master plan to identify capital facilities to serve the LBPD. In addition, the LBPD would continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's Tidelands operation revenue; and other revenue sources such as general grants (e.g., federal, State, and County grants).[1] The additional personnel, building, and materials costs for police services in the City required due to increased demand from future development accommodated by the proposed project would be offset through these revenue sources.

[1] City of Long Beach Auditor's Office. 2017. *Proposition H Police and Fire Public Safety Oil Production Act*. January 29.

Table 4.7.E: Police Facilities Impact Fees (2018)

Land Use Type	Fee
Residential	
Single-Family	$703/dwelling
Multi-Family	$537/unit
Non-Residential	
Commercial	$0.442/sf
Office	$0.538/sf
Industrial	$0.218/sf

Source: City of Long Beach Developer Fees (updated May 15, 2018, effective October 1, 2018). Website: http://www.lbds.info/civica/filebank/blobdload.asp ?BlobID= 2506 (accessed July 30, 2018).
sf = square foot/feet

By following this process, sufficient revenue would be available for necessary service improvements to provide for adequate police facilities, equipment, and personnel associated with the anticipated General Plan build out scenario (2040).

As stated previously, 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.[1] The LBPD anticipates that the population increase associated with the anticipated General Plan build out scenario (2040) would necessitate an increase in sworn officers and support staff. However, impacts to police services are anticipated to be funded by an increase in tax revenues over an extended period of time. New development over time would increase contributions to the General Fund through tax revenues by which the fund would be expected to grow in rough proportion to any increase in residential dwelling units and/or nonresidential space. Additional police personnel and resources would be provided through the annual budget review process. Annually, the LBPD assesses and allocates its budget to ensure that adequate levels of service are maintained throughout the City. Additional resources and personnel funded by an increase in tax revenue, along with collection of Police Facilities Impact Fees, would maintain the level of service needed to support the increase in growth. Further, the proposed project would encourage future development projects to incorporate CPTED strategies into their design (Policies UD 7-3 and UD 16-5) to reduce crime in the planning area.

As previously stated, police and fire stations are two of the preferred land uses within the following designated PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors–Low and Moderate, Transit-Oriented Development – Low and Moderate, and Industrial. While there are no new police facilities planned at this time, the proposed PlaceType designations would permit the future development and operation of new stations within these PlaceTypes. The proposed project does not include physical improvements, and future projects subject to discretionary review would be required to assess project impacts on police services. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities in

[1] City of Long Beach. Fiscal Year 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).

order to maintain acceptable service ratios, response times, or other performance objectives for police protection. Project impacts related to police protection would be less than significant.

Threshold 4.7.3: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 *public schools*?

Less than Significant Impact.

Construction. As described further in Section 4.6, Population and Housing, future construction activities associated with projects facilitated by the proposed project would utilize construction workers within the local and regional labor force. As such, construction workers are not anticipated to relocate to the planning area as a result of project implementation, and would not result in the generation of new school-aged children. Moreover, construction impacts, including development of new schools and educational uses as allowed under the proposed project, are assumed in the build out analysis analyzed throughout this Recirculated Draft EIR. Therefore, future construction activities occurring as a result of project approval would result in less than significant impacts to school facilities, and no mitigation would be required.

Operation. Implementation of the proposed project would allow future development that would enable the generation of school-aged children within the LBUSD service area. The anticipated General Plan build out scenario (2040) could include the addition of up to 28,524 dwelling units[1] by 2040. Table 3.C, in Chapter 3.0, Project Description, provides the total number of dwelling units facilitated by project implementation, and identifies the number of single-family and multi-family housing types. Of the additional 28,524 dwelling units, 1,274 would be single-family and 27,250 would be multi-family residential units.

The addition of these new housing units within the City has the potential to generate student growth in the LBUSD. Ultimately, student growth will depend on the nature of population growth in general; while the City's population has grown in recent decades, LBUSD enrollment has declined. The proposed project would allow the City to address current and projected issues related to overcrowding due to a lack of housing at all levels of affordability and would ensure the City's compliance with the State Regional Housing Needs Assessment (RHNA) goals. As an outcome of the most recent RHNA process, the City is required to plan for 7,048 new dwelling units by 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 (12.2 percent of existing households experience overcrowding). As discussed in Chapter 3.0, Project Description, the City has identified a need for 21,476 housing units to address existing housing needs attributed to overcrowding. As such, the majority of the 28,524 anticipated new housing units would serve to relieve overcrowding of existing households in the City, so those families are

[1] Refer to Chapter 3.0, Project Description, and Section 4.6, Population and Housing, of this Recirculated Draft EIR.

already being served by LBUSD. Still, this potential future growth could strain existing and/or planned school facilities. While the proposed project does not include the approval of any specific development, student generation was estimated in order to determine whether the proposed project would impact the LBUSD.

The LBUSD uses generation factors to determine the number of students per dwelling unit, and uses different student generation rates for each school level for single-family detached, single-family attached, and multi-family dwelling unit types.[1] Calculations for all 1,274 single-family residential units associated with the anticipated General Plan build out scenario (2040) utilized the single-family detached student generation rates, as opposed to the lower single-family attached generation rates, in order to provide a conservative, worst-case scenario estimate. As illustrated by Tables 4.7.F and 4.7.G, the anticipated General Plan build out scenario (2040) would allow for the development of up to 1,274 single-family and 27,250 multi-family dwelling units by 2040, which would generate approximately 496 and 4,775 additional students, respectively (5,271 in total). The number of additional students generated per dwelling type is also estimated by school level, as shown in Tables 4.7.F and 4.7.G below.

Table 4.7.F: New Students Generated by the Proposed Project: Single-Family Units

School Level	Projected Build-Out Single-Family Units	Generation Rate (single-family detached units)[1]	LBUSD Students added by Proposed Project (2040)
Elementary Schools (Grades K–5)	1,274	0.1611	205.2
Middle Schools (Grades 6–8)	1,274	0.1141	145.4
High Schools (Grades 9–12)	1,274	0.1141	145.4
Total	**-**	**-**	**496**

Source: LBUSD. *School Facilities Needs Analysis* (February 2018).
Note: LBUSD operates elementary schools that serve Kindergarten through 5th grade and middle schools that serve 6th to 8th grade. LBUSD's school level configuration was altered in the source to compare capacity and enrollment consistent with Office of Public School Construction SAB Form 50-02.
K = Kindergarten LBUSD = Long Beach Unified School District SAB = State Allocation Board

Table 4.7.G: New Students Generated by the Proposed Project: Multi-Family Units

School Level	Projected Build-Out Multi-Family Units	Generation Rate (multi-family units)	LBUSD Students added by Proposed Project (2040)
Elementary Schools (Grades K–5)	27,250	0.0511	1,392.5
Middle Schools (Grades 6–8)	27,250	0.0219	596.8
High Schools (Grades 9–12)	27,250	0.1022	2,785
Total	**-**	**-**	**4,775**

Source: LBUSD. *School Facilities Needs Analysis* (February 2018).
Note: LBUSD operates elementary schools that serve Kindergarten through 5th grade and middle schools that serve 6th to 8th grade. LBUSD's school level configuration was altered in the source to compare capacity and enrollment consistent with Office of Public School Construction SAB Form 50-02.
K = Kindergarten LBUSD = Long Beach Unified School District SAB = State Allocation Board

[1] Long Beach Unified School District (LBUSD). 2018. *School Facilities Needs Analysis*. February 15.

Table 4.7.H displays the existing LBUSD (2017–2018) facilities capacity as compared to the projected student enrollment associated with the anticipated General Plan build out scenario (2040). While Table 4.7.H depicts the projected student enrollment demand during the year 2040, enrollment currently fluctuates on an annual basis and is anticipated to continue to do so over the 21-year planning period associated with the proposed project. As shown in Table 4.7.H, the LBUSD currently has capacity at all levels to facilitate current student enrollment levels at the elementary, middle, and high school levels for the 2017–2018 school year. Under the anticipated General Plan build out scenario (2040), elementary and middle school enrollment in LBUSD would continue to be within the 2017–2018 LBUSD facilities capacity, but total estimated enrollment for high schools in LBUSD in 2040 could exceed the LBUSD current facilities capacity. However, anticipated new housing units would be built over the course of 21 years (during which enrollment rates would likely fluctuate), and the majority of new housing units would serve to relieve overcrowding of existing households in the City. Although the City's population has grown in recent decades, LBUSD enrollment has declined. Still, this potential future growth could strain existing and/or planned school facilities. Overall, LBUSD would have excess enrollment capacity of 2,457 spaces under the anticipated General Plan build out scenario (2040).

Table 4.7.H: LBUSD Current Facilities Capacity (2017–2018) and Projected Demand at 2040 General Plan Build-Out

School Level	2017–2018 LBUSD Facilities Capacity[1]	2017–2018 LBUSD Student Enrollment[1]	New LBUSD Students added by Proposed Project (2040)	Total Enrollment (2040)	Excess/ (Shortage) Capacity
Elementary Schools (Grades K–6)	44,779	40,139	1,598	41,737	3,042
Middle Schools (Grades 7–8)	13,776	11,273	743	12,016	1,760
High Schools (Grades 9–12)	23,750	23,164	2,931	26,095	(2,345)
Total	**82,305**	**74,576**	**5,272**	**79,848**	**2,457**

Sources: Long Beach Unified School District and LSA Associates, Inc.
Note: LBUSD operates elementary schools that serve Kindergarten through 5th grade and middle schools that serve 6th to 8th grade. LBUSD's school level configuration was altered in the source to compare capacity and enrollment consistent with Office of Public School Construction SAB Form 50-02.
[1] LBUSD. *School Facilities Needs Analysis* (February 2018).
K = Kindergarten
LBUSD = Long Beach Unified School District
SAB = State Allocation Board

As noted above, all future development projects in the City would be required to pay school developer fees to LBUSD for the operation, maintenance, and development of schools to accommodate future student enrollment. Table 4.7.I displays the current (effective May 22, 2018) developer fees adopted by LBUSD. These fees are calculated per square footage of residential, commercial, and industrial development. Project applicants would be required to pay the adopted school developer fees to LBUSD prior to the issuance of a building permit.

Table 4.7.I: LBUSD Current School Developer Fees (2018)

Type of Development	Fee Type	Fee per Square Foot
Residential -Level I (Residential additions over 500 sf)	Statutory school fees	$3.79
Residential-Level II (New Residential Construction and Residential Redevelopment)	Alternative school fees	$4.14
Commercial	Statutory school fees	$0.61

City of Long Beach Developer Fees (updated May 15, 2018, effective May 22, 2018). Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2506 (accessed July 30, 2018).
LBUSD = Long Beach Unified School District
sf = square foot/feet

If student growth generated by the anticipated General Plan build out scenario (2040) exceeds the estimates identified above, the acquisition, modernization, or modification of school sites to accommodate additional facilities could be required. In addition, in correspondence dated November 5, 2018, LBUSD indicated that implementation of the project would potentially create a need to expand existing or planned school facilities or staff, construct a new facility, or otherwise adversely impact LBUSD services.[1] The LBUSD reserves its right to negotiate school impact fees with developers per square footage for residential units in order to fund school improvements. The proposed project does not include any physical improvements but it would allow for future development; therefore, future school facility needs would be funded by fees collected by future development projects within the City. In addition, schools are an institutional use allowed in all PlaceTypes, and therefore, the proposed project would not constrain the development of schools within certain PlaceTypes. Further, consistent with the proposed LUE and UDE, all future projects would be required to undergo project-specific environmental review and comply with the provision of school developer fees for new/altered facilities. Additional school resources would also continue to be funded by an increase in tax revenue as a result of future growth. Therefore, impacts of the proposed project related to student generation and the potential need for additional school facilities would be less than significant, and no mitigation would be required.

Threshold 4.7.5: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 other *public facilities (libraries)*?

Less than Significant Impact.

Construction. As described further in Section 4.6, Population and Housing, future construction activities associated with project implementation would utilize construction workers within the local and regional labor force. As such, construction workers are not anticipated to relocate to the planning area as a result of project implementation. Therefore, future construction activities

[1] Long Beach Unified School District (LBUSD). Correspondence with Melanie Nazarbekian, LBUSD Assistant Project Manager, dated November 5, 2018.

occurring as a result of project approval would not result in impacts to public facilities (including libraries), and no mitigation would be required.

Operation. The proposed project does not include any physical improvements but would allow for new PlaceTypes that would facilitate an increase in housing units in the City and could increase the demand for LBPL facilities. As previously identified, implementation of the proposed project could result in the development of approximately 28,524 dwelling units and the addition of 18,230 persons by 2040.

Demand for library services is typically determined based on the size of the resident population. The City has not formally adopted a service standard of library space per capita, but the City did establish a target of 0.45 sf per capita in its budget for FY 2007. Using this standard and the estimated future population of approximately 484,485, the LBPL system would need to contain a total of 218,019[1] sf to meet this target. In total, the existing LBPL system has approximately 237,695 sf of library facilities, which is greater than the City's threshold for providing library services for the existing population and the projected demand generated by the anticipated General Plan build out scenario (2040). In addition, technology continues to evolve as does resident demand for library services and resources. With the increased demand for electronic resources, it may be valuable to measure library services by more than a square footage per capita benchmark. For example, the City is replacing the Main Library with a new library at the City's Civic Center. Although this library is smaller in square footage than the original library, the new library makes more efficient use of its space. It also contains more electronic resources and requires less space to accommodate hardcopy library materials. Therefore, the loss of library square footage is not considered a loss of library volumes or available resources to serve the existing and projected population in the City. It is anticipated that the demand for electronic materials will continue to increase, potentially reducing the amount of square footage to service library patrons. Further, in correspondence dated November 5, 2018, LBPL personnel indicated that implementation of the project would not create a need to expand existing or planned library facilities or staff, construct a new facility, or otherwise adversely impact LBPL services.[2] Therefore, the proposed project's increase in demand on library services can be served by the existing facilities and would not adversely affect library services in the project area. As such, the proposed project would have less than significant impacts related to public libraries, and no mitigation would be required.

4.7.9 Mitigation Measures

The proposed project would not result in any significant adverse impacts related to public services, and no mitigation would be required.

4.7.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for public services. The planning area includes the entire

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1 0.45 square feet per the City's population of 484,485 in 2040.

2 Long Beach Public Library (LBPL). Correspondence with Amber Ahlo, LBPL Administrative Officer, dated November 5, 2018.

52 square miles within the limits of the City of Long Beach; therefore, the cumulative area for public services is listed below for each individual public service provider.

4.7.10.1 Fire Protection

The geographic area for cumulative analysis of fire protection services is defined as the LBFD service territory, which is defined as the City of Long Beach. As stated previously, LBFD personnel indicated that project implementation could strain the existing system and negatively impact the call volume, response times, and LBFD resources. However, each future project requiring a discretionary action within the City would be evaluated individually, and project-specific mitigation would be proposed as needed. The costs of additional LBFD resources are anticipated to be offset through increased revenues and fees, such as property taxes and Fire Facilities Impact Fees, generated by future development.

The City is almost entirely built out, with most new development occurring as in-fill projects. The LBFD anticipates cumulative demand in order to plan for overall service. This cumulative demand is anticipated to be met through project implementation as the LUE establishes the development of future fire stations as a preferred land use type in the following PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors – Low and Moderate, and Transit-Oriented Development – Low and Moderate, and Industrial. Furthermore, through implementation of the proposed project, the City will reduce the potential for dangerous fires by concentrating development within urban areas where there is a low fire risk and by requiring that future projects comply with applicable City and State regulations related to fire. Therefore, the proposed project's contribution to fire protection impacts would not be cumulatively considerable, and no mitigation would be required.

Police Protection. The geographic area for cumulative analysis of police projection is defined as the service area for the LBPD, which is defined as the City of Long Beach. Each future project requiring a discretionary action within the project area would be evaluated individually, and project-specific mitigation would be required as needed.

The City is almost entirely built out, with most new development occurring as in-fill projects and with the majority of new development intended to serve existing residents in overcrowded units, who are already being served by the LBPD. This cumulative demand is anticipated to be met through project implementation as the LUE establishes the development of future police stations as a preferred land use type in the following PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors – Low and Moderate, Transit-Oriented Development – Low and Moderate, and Industrial. In addition, the potential need for additional law enforcement associated with cumulative growth would be addressed through the annual budgeting process when budget adjustments would be made in an effort to meet changes in service demand. Finally, as shown previously in Table 4.7.E, police facilities impact fees would be required for new residential and nonresidential development to offset additional costs of new development. Therefore, the proposed project's contribution to police protection impacts would not be cumulatively considerable, and no mitigation would be required.

Public Schools. The geographic area for the cumulative analysis of public schools is defined as the service territory for the LBUSD. As stated previously, LBUSD personnel indicated that implementation of the project would potentially create a need to expand existing or planned school facilities or staff, construct a new facility, or otherwise adversely impact LBUSD services. However, each future project requiring a discretionary action within the project area would be evaluated individually, and project-specific mitigation would be proposed as needed.

The proposed project could generate approximately 5,272 school-aged children by 2040, which would lead to an increased demand on existing educational school facilities. Future projects consistent with the LUE would be accounted for on a project-by-project basis. Residential projects located within the LBUSD service area, but outside the City of Long Beach, would have the potential to generate school-aged children, and, as a result, increase demand on educational school facilities. As noted above, LBUSD would assess developer fees to future projects within its service area in an effort to fund future schools needed to meet the project-related increase in school-aged children. Further, while the City acknowledges that new development would increase demand for school facilities, the City is precluded by SB 50 from considering this a significant CEQA impact where the collection of school impacts fees occurs. Therefore, the proposed project would not contribute to any cumulative school impacts, and no mitigation would be required.

Public Libraries. The geographic area for the cumulative analysis of public libraries is defined as the service territory for the LBPL system. Each future project requiring a discretionary action within the project area would be evaluated individually and project-specific mitigation would be proposed as needed. The City currently meets the LBPL system's square footage goals and LBPL personnel indicated that implementation of the project would not create a need to expand existing or planned library facilities or staff, construct a new facility, or otherwise adversely impact LBPL services. Further, the City has replaced older less-efficient library buildings with newer facilities with more electronic resources and library materials. As the demand for electronic resources continues to increase, less square footage is required for library facilities. Therefore, the proposed project's library demand would not exceed the LBPL system's ability to provide library services. Therefore, the proposed project's contribution to library impacts would not be cumulatively considerable, and no mitigation would be required.

4.7.11 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts of the proposed project related to public services, and no mitigation would be required.

4.8 TRANSPORTATION

4.8.1 Introduction

This section analyzes the existing and planned transportation/traffic and circulation conditions for the planning area, and identifies circulation impacts that may result from implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project). The analysis contained in this section is based on the *Traffic Impact Analysis*, *General Plan Land Use and Urban Design Elements, City of Long Beach, California* (TIA) prepared by LSA Associates, Inc. (LSA 2019) (Appendix G).

4.8.2 CEQA Baseline

Although the Notice of Preparation (NOP) was published in May 2015, the baseline for transportation is considered to be 2018 when the analysis for the Recirculated Draft Environmental Impact Report (EIR) was initiated. This provides an updated baseline that reflects current conditions related to transportation at the time the Recirculated Draft EIR was prepared.

4.8.3 Methodology

The TIA prepared for the proposed project is consistent with the objectives and requirements of the City of Long Beach (City), the Los Angeles County (County) Congestion Management Program (CMP) (2010), California Department of Transportation (Caltrans) methodology, and applicable provisions of the California Environmental Quality Act (CEQA).

4.8.3.1 Background Information: The Mobility Element

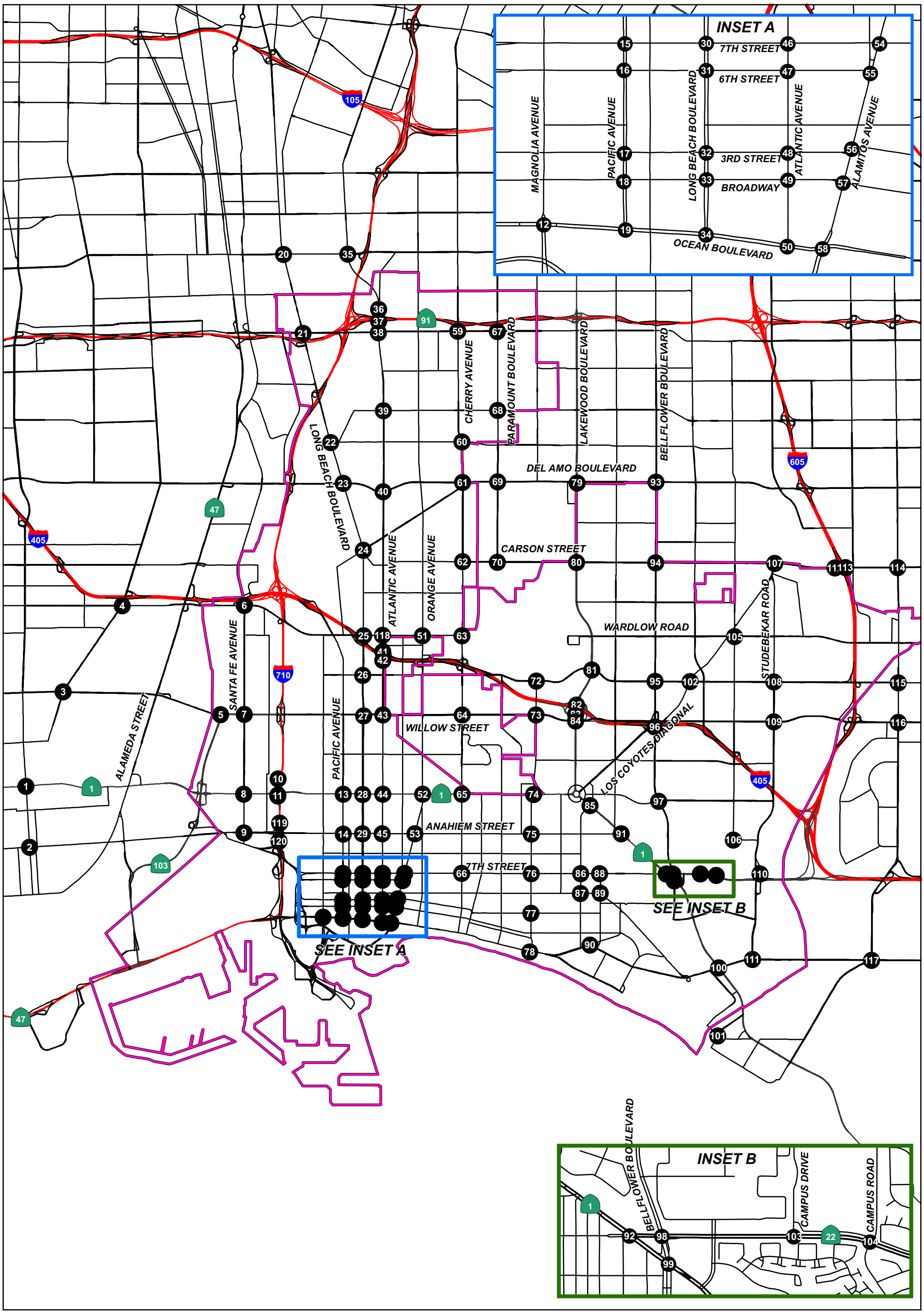
The City adopted its General Plan Mobility Element in October 2013. The Mobility Element analyzed existing and future (2035) traffic conditions. Future traffic conditions reflected growth in the City's population and employment, as well as growth in regional traffic. No changes to land use were presumed in future conditions at the time the Mobility Element was prepared.

The Mobility Element outlines goals for a balanced transportation system that is more responsive to all travel modes, with a particular emphasis on the mobility of people. Some of these goals (e.g., increased abilities to walk, bike, and use transit) would be supported by the changes in the proposed Land Use Element (LUE). These goals would also be consistent with the intent of Senate Bill (SB) 375 and the Climate Protection Act of 2008, which mandates closer linkage between land use and transportation infrastructure and SB 743, which reduces the emphasis on preserving vehicle level of service in favor of reductions in vehicle miles traveled (VMT).

Given that the Mobility Element places an emphasis on alternative modes of transportation, measuring the performance of the transportation system based solely on the convenience of travel for private automobiles will be replaced with other accessibility and mobility metrics. Consequently, the City's Mobility Element states the intent of the City to adopt a multimodal level of service (LOS) policy. Furthermore, the City is in the process of revising traffic impact guidelines consistent with recently revised CEQA guidelines mandating analysis of VMT by July 1, 2020. However, at the present time, the vehicle LOS policy is still in place.

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. The TIA built on the previously analyzed 88 intersections by adding a sample of intersections in each jurisdiction neighboring Long Beach as well as 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 for the proposed Land Use Element (LUE)/Urban Design Element (UDE) project. Figure 4.8.1, Study Area Intersections, 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)
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)



LSA

LEGEND

Study Intersections

City of Long Beach

0 3000 6000
FEET

SOURCE: ESRI Streetmap, 2013.

I:\CLB1804\G\Traffic\Study Intersections.cdr (4/5/2019)

FIGURE 4.8.1

Long Beach General Plan Land Use and Urban Design Elements

Study Area Intersections

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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/Atherton Street (Long Beach)
96. Bellflower Boulevard/7th Street (Long Beach)
97. Bellflower Boulevard/Pacific Coast Hwy (Caltrans)
98. Pacific Coast Hwy/2nd Street (Caltrans, CMP)
99. 1st Street/Marina Drive (Long Beach)
100. Los Coyotes Diagonal/Spring Street (Long Beach)
101. West Campus Drive/7th Street (Long Beach)
102. East Campus Road/7th Street (Long Beach)
103. Palo Verde Avenue/Wardlow Road (Long Beach)
104. Palo Verde Avenue/Anaheim Street (Long Beach)
105. Los Coyotes Diagonal/Carson Street (Long Beach/ Lakewood)
106. Studebaker Road/Spring Street (Long Beach)
107. Studebaker Road/Willow Street (Long Beach)
108. 7th Street/College Park Drive (Long Beach)
109. Studebaker Road/2nd Street (Long Beach)
110. I-605 SB Ramps/Carson Street (Caltrans)
111. I-605 NB Ramps/Carson Street (Caltrans)
112. Norwalk Boulevard/Carson Street (Hawaiian Gardens)
113. Norwalk Boulevard/Cerritos Avenue (Los Alamitos)
114. Los Alamitos Boulevard/Katella Avenue (Garden Grove)
115. Seal Beach Boulevard/Westminster Road (Seal Beach)
116. Atlantic Avenue/I-405 WB Ramps (Caltrans)
117. I-710/Anaheim St Cloverleaf WB (Caltrans)
118. I-710/Anaheim St Cloverleaf EB (Caltrans)
119. Bellflower Boulevard/Spring Street (Long Beach)
120. Bellflower Boulevard/Los Coyotes Diagonal (Long Beach)

4.8.3.2 Intersection Level of Service Methodology.

As previously stated, while the City views mobility as the movement of people and is working toward revising transportation impact guidelines, the methodology for such analysis is not currently available. Therefore, the current methodology, which focuses on the movement of automobiles, was utilized for the purposes of this TIA in addition to the VMT analysis also provided. Because the movement of automobiles through a roadway network is metered by the performance of intersections along the network, the City's methodology requires the analysis of intersection performance. Specifically, the performance of intersections was examined during the busiest morning commute hour (a.m. peak hour) and the busiest afternoon commute hour (p.m. peak hour) using intersection capacity utilization (ICU methodology).

The ICU methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums up these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU is expressed in terms of LOS, where LOS A represents free-flow activity and LOS F represents overcapacity operation.

Caltrans prefers the Highway Capacity Manual (HCM) methodology for analysis of intersections. The Highway Capacity Manual, 6th Edition (HCM) (Transportation Research Board 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.

Typical intersection operations by LOS grade are described below in Table 4.8.A.

Table 4.8.A: LOS Descriptions

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.

The relationship between ICU and LOS is shown below in Table 4.8.B:

Table 4.8.B: LOS/ICU Value Comparison

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 in Table 4.8.C:

Table 4.8.C: LOS/HCM Value Comparison

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).

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.

4.8.3.3 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.

4.8.3.4 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 the 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 vehicles per hour per lane (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) were 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.

4.8.3.5 Future Traffic Projection

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, as documented in the City-prepared Assessment of Fair Housing (AFH, 2016) required by the United States Department of Housing and Urban Development.

As an outcome of this AFH assessment, it was determined that the City has anticipated housing needs for 21,476 housing units to address existing housing needs to alleviate overcrowding. In total, Long Beach requires 28,524 housing units to accommodate the needs of projected population (7,048 housing units needed) and existing (21,476 housing units needed to address overcrowding) 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 such as the LUE/UDE.

As a result of the processes described above, the following quantities of demographic data growth are anticipated in the anticipated General Plan build out scenario (2040):

- **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 LUE, which segregates property with traditional single-use land use designations, the proposed LUE establishes 14 PlaceTypes that would divide Long Beach into distinct 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 3.4 (refer to Chapter 3.0, Project Description, of this Recirculated Draft EIR) displays the proposed locations of PlaceTypes, and Figure 3.5 (Chapter 3.0) displays the height limits throughout Long Beach.

Under the proposed LUE, approximately 13 percent of Long Beach is proposed to result in concentrated land use changes as compared to existing conditions to focus anticipated growth. These areas are referred to as “Major Areas of Change” throughout the proposed LUE. The Major Areas of Change signify areas where demographic growth is anticipated to be most concentrated; however, areas that are not designated as “Major Areas of Change” and/or are not anticipated to result in considerable changes in existing land use patterns may also experience development and change. Figure 3.6 (Chapter 3.0) displays the Major Areas of Change.

The SCAG RTP Travel Demand Model was modified to reflect the changes included in the proposed project. The projections of population and employment growth are not affected by the proposed project, rather, the proposed project strategically accommodates the growth projected by SCAG. However, the number of housing units is anticipated to increase to address overcrowding. The proposed LUE 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 Traffic Analysis Zones (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 (Appendix E). In summary, previously calculated changes in demographic data disclosed in previous Specific Plan documents (e.g., the Downtown Plan, the Midtown Specific Plan, the Douglas Park Rezone Project, and the 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 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.

4.8.4 Existing Environmental Setting

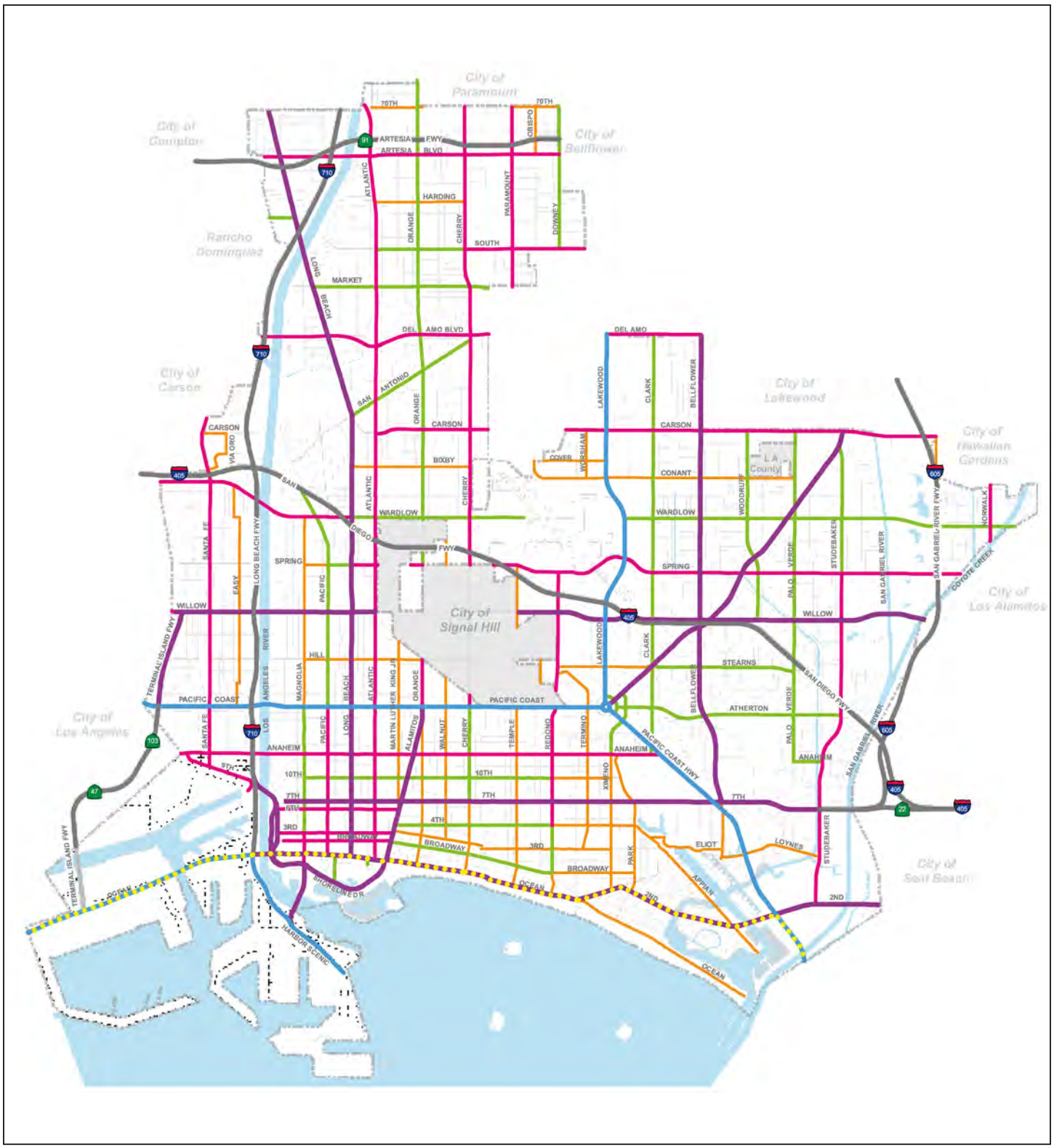
4.8.4.1 Existing Circulation System

The City has adopted a context-sensitive street classification plan emphasizing mobility for different roadway users. These classifications run from regional corridors designed for intraregional travel to local streets discouraging high volumes of through traffic to enhance the ability to serve bicycles and pedestrians. The circulation system forms a grid network that is denser in the downtown area where a greater density of land uses require support from a greater density of roadways. Figure 4.8.2, Context Sensitive Street Classification System, illustrates the existing roadway network by street classification.

4.8.4.2 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 the Los Angeles County Metropolitan Transportation Authority (Metro). Metro operates fixed-route local and express bus service on a limited number of routes within Long Beach. Metro also operates the Blue



LSA

FIGURE 4.8.2

Long Beach General Plan Land Use and Urban Design Elements

Context-Sensitive Street Classification System

SOURCE: City of Long Beach, Mobility Element

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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 4.8.3, Transit-Priority Streets, illustrates the existing transit network within Long Beach.

4.8.4.3 Existing Bicycle Network

As previously explained, it is the stated priority of the City to provide alternative modes of transportation in place of private automobiles. As part of this effort, the City has established a bicycle transportation network and has adopted a Bicycle Master Plan (2001), which was updated in 2017 at which time it became an appendix to the Mobility Element (2013) of the General Plan. The vision for bicycle infrastructure buildout is illustrated on Figure 4.8.4, Bicycle Master Plan.

The City has 127.1 miles of different types of bike paths, including 34.7 miles of Class 1 bikeways, 59.9 miles of Class II bikeways, 28.1 miles of Class III bike routes, and 4.4 miles of Class IV separated bikeways,[1] as described further below.

- **Class I:** Variously called a bike path or multi-use trail. Provides for bicycle travel on a paved right of way completely separated from any street or highway.
- **Class II:** Referred to as a bike lane. Provides a striped lane for one-way travel on a street or highway.
- **Class III:** Referred to as a bike route or sharrow. Provides for shared use with pedestrian or motor vehicle traffic.
- **Class IV:** These protected bike lanes provide a physical buffer between vehicle travel lanes and on-street bike lanes.

To provide connections to other transportation modes, bicycle racks are included at several of the transit stops within the City. In addition, the Long Beach Bikestation is located in downtown Long Beach, near the Metro Blue Line. The Bikestation provides valet bicycle parking, bicycle rentals, and other amenities.

4.8.4.4 Existing Pedestrian Network

The existing conditions within the City include an elaborate network of pedestrian facilities, such as sidewalk coverage, curb cuts, crosswalks, street lighting, landscaping, shared-use paths, promenades, recreational pathways, and signalized intersections that serve the needs of pedestrians.

[1] Bicycle Master Plan Table 3-4. 2017. Website: http://longbeach.gov/globalassets/pw/media-library/documents/resources/general/bicycle-master-plan/bicycle_master_plan (accessed May 7, 2019).

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LSA

Legend

Transit Route Classification

- Secondary
- Primary
- Multimodal Hub
- Metro Rail Stations
- Metro Rail
- Bus Routes (includes LB Transit, Metro, and OCTA)

N

FIGURE 4.8.3

Long Beach General Plan Land Use and Urban Design Elements

Transit-Priority Streets

SOURCE: City of Long Beach, Mobility Element

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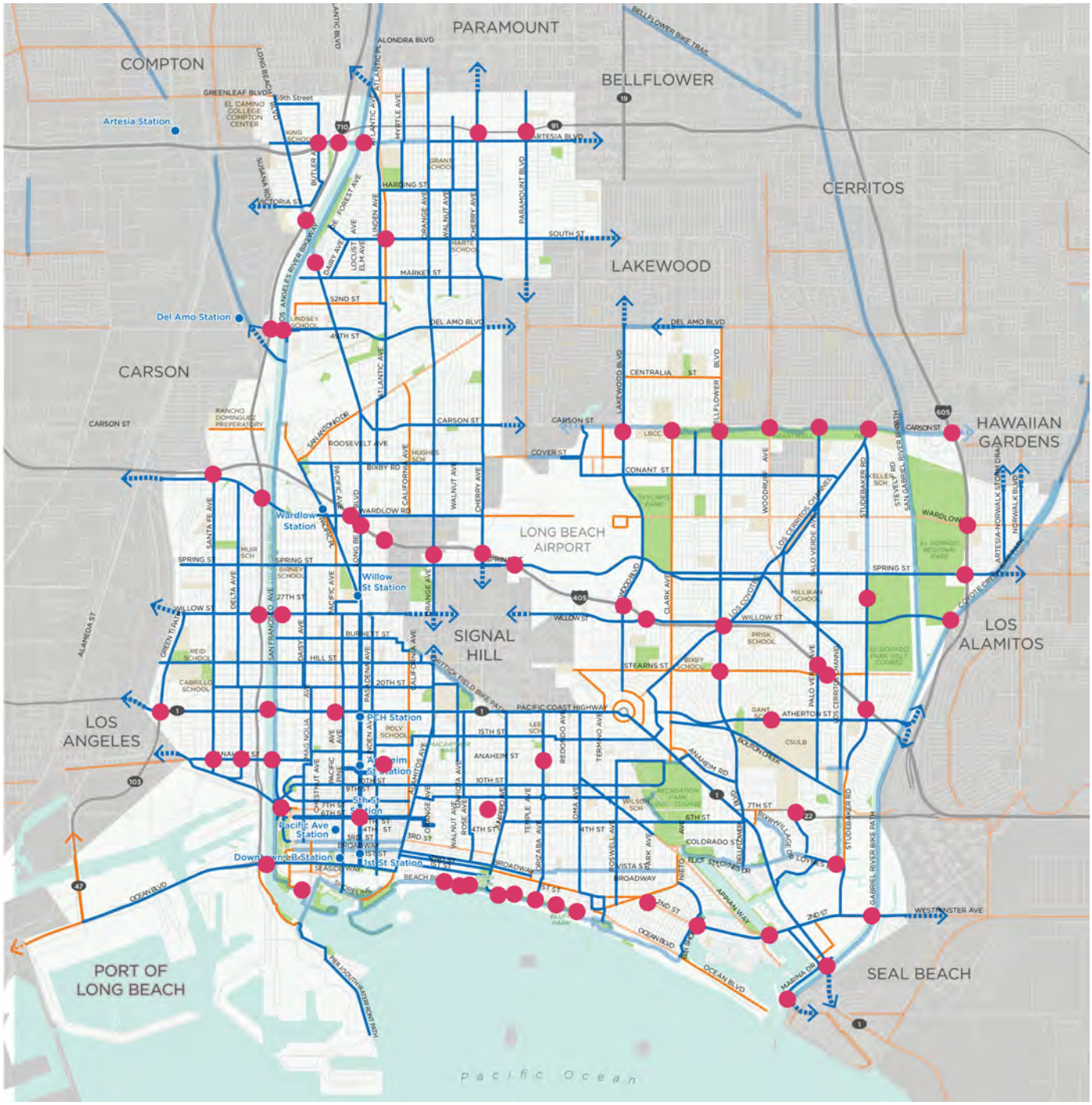

LSA

LEGEND

- Spot Improvement
- Recommended 8-to-80 Bikeway
- Recommended Bike Lane
- Existing 8-to-80 Bikeway
- Existing Bike Lane

FIGURE 4.8.4

N

NO SCALE

Long Beach General Plan Land Use and Urban Design Elements

Bicycle Master Plan

SOURCE: City of Long Beach, Bicycle Master Plan (2017)

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In recent years, the City has made a concerted effort to improve the walkability citywide with a particular focus on its Downtown and transit-rich communities. After adoption of the Mobility Element in 2013, two pedestrian plans were developed as technical appendices to the new element. Adopted in 2016, the Downtown and TOD Pedestrian Master Plan[2] focuses on the transit rich Downtown and around Metro Blue Line transit stops to provide policies, guidelines, and standards that ensure best practices for pedestrian design and identify catalytic infrastructure projects. Adopted in 2017, the Communities of Excellence in Nutrition, Physical Activity and Obesity Prevention (CX3) Pedestrian Plan[3] was developed in collaboration with the Health Department to guide the improvement of the walking environment in low-income neighborhoods within Central and West Long Beach by connecting adopted City policies and plans, best practices, and the community's voce for a safe, healthy, and beautiful City.

Buildings, sidewalk lighting, sidewalks, landscaping, and street furniture have been implemented to encourage walking between the transit stations, housing, shopping, employment centers, and nearby recreation uses.

4.8.4.5 Existing Intersection LOS Analysis

For a few of the study intersections, traffic volume data had been collected since 2016 and could 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.) and evening (4:00 p.m.–6:00 p.m.) commute periods. Peak-hour intersection turn volumes were surveyed on a typical. These volumes were taken in 15-minute increments and then totaled as hourly volumes, which is the standard procedure for volume data collection.

Table 4.8.D summarizes the results of the existing a.m. and p.m. peak-hour LOS analysis. As Table 4.8.D 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.

[2] Long Beach Development Services. 2016. Website: http://www.lbds.info/tod_pedestrian_master_plan/ (accessed May 6, 2019).

[3] Long Beach Development Services. 2017. Website: http://www.lbds.info/cx3pedplan/ (accessed May 6, 2019).

Table 4.8.D: 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 4.8.D: 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 4.8.D: 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 (2019).
Note: Shaded cells indicate unsatisfactory LOS.
[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

4.8.5 Regulatory Setting

4.8.5.1 Federal Regulations

There are no relevant federal traffic and circulation regulations applicable to the proposed project.

4.8.5.2 State Regulations

Congestion Management Program. In Los Angeles County, the CMP is the program by which County agencies have agreed to monitor and report on the status of regional roadways. In June 1990, the passage of the Proposition 111 gas tax increase required urbanized areas in the State with a

population of 50,000 or more to adopt a CMP. The CMP is intended to link transportation, land use, and air quality decisions, as well as address the impact of local growth on the regional transportation system. State legislation requires that the CMP contain a process to analyze the impacts of land use decisions by local governments on the regional transportation system. For CMP purposes, the regional transportation system is defined by the legislation as all State highways and principal arterials. The identification and analysis of impacts along with estimated mitigation costs are determined with respect to this CMP Highway System.

As the Congestion Management Agency for Los Angeles County, Metro is responsible for the preparation of the CMP. The latest CMP (Metro 2010) states that a significant impact would occur if intersection LOS with the project is LOS F and the proposed project causes a 0.02 or greater increase in volume-to-capacity ratio. The CMP includes 10 monitored intersections within the City of Long Beach. These intersections are as follows, and are also included in the project study area:

- (8) Santa Fe Avenue/Pacific Coast Highway
- (52) Orange Avenue/Pacific Coast Highway
- (54) Alamitos Avenue/7th Street
- (58) Alamitos Avenue/Shoreline Avenue-Ocean Boulevard
- (76) Redondo Avenue/7th Street
- (80) Lakewood Boulevard/Carson Street
- (84) Lakewood Boulevard/Willow Street
- (85) Pacific Coast Highway/Ximeno Avenue
- (92) Pacific Coast Highway/7th Street
- (100) Pacific Coast Highway/2nd Street

SB 743. On December 28, 2018, the California Office of Administrative Law cleared the revised *State CEQA Guidelines* for use. Among the changes to the *State 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 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 proposed project's 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 proposed project, 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.

4.8.5.3 Local and Regional Policies and Regulations

City of Long Beach General Plan Mobility Element. In October 2013, the City approved the Mobility Element of the City's General Plan. The Mobility Element seeks to guide development and improvements to the existing circulation system. As previously stated, the Mobility Element establishes several goals aimed at improving the existing transportation system so that it is responsive to all travel modes. Some of these goals (e.g., increased ability to walk, bike, and use transit) would be supported by the changes in the proposed LUE. The following transportation/traffic goals and policies in the City's Mobility Element are applicable to the proposed project.

Goal 1: Create a safe, efficient, balanced, and multimodal mobility network.

Mobility of People (MOP) Policies:

MOP Policy 1-1 To improve the performance and visual appearance of Long Beach's streets, design streets holistically using the "complete streets approach" which considers walking, those with mobility constraints, bicyclists, public transit users, and various other modes of mobility in parallel.

MOP Policy 1-12 Continue to assist Long Beach Transit in implementing a comprehensive Citywide transit service that meets future needs.

MOP Policy 1-13 Increase multimodal access to major employers and educational institutions, including Long Beach City College.

MOP Policy 1-14 Use universal design techniques to accommodate pedestrians of all ages and abilities and ensure compliance with the Americans with Disabilities Act.

MOP Policy 1-17 Develop land use policies that focus development potential in locations best served by transit.

MOP Policy 1-18 Focus development densities for residential and nonresidential land uses around the eight Metro Blue Line stations within City boundaries.

MOP Policy 2-2 Design the character and scale of the street to support its street type and place-type designation and overlay networks (for example, create a bike boulevard or bicycle-friendly retail district, transit street, or green street).

MOP Policy 2-15 Ensure that all new development is consistent with the applicable provisions of the Bicycle Master Plan.

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 6-12 Promote transit-oriented development with reduced parking requirements around appropriate transit hubs and stations to facilitate the use of available transit systems.

4.8.6 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact with respect to transportation if it would:

Threshold 4.8.1: Conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;

Threshold 4.8.2: Conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b);

Threshold 4.8.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

Threshold 4.8.4: Result in inadequate emergency access.

The Initial Study/Notice of Preparation (IS/NOP) (Appendix A) determined that the proposed project would result in less than significant impacts related to four of the six transportation thresholds that were included in Transportation/Traffic section of Appendix G of the *State CEQA Guidelines*. However, the CEQA thresholds related to transportation were modified in December 2018 as part of the State's comprehensive update to the *State CEQA Guidelines*. Two of the thresholds identified in the IS/NOP were retained after adoption of the revised guidelines (Thresholds 4.8.3 and 4.8.4). As described further in the IS/NOP, the proposed project is a planning/policy action and as such, the design details of future projects are unknown at this time. Future projects facilitated by approval of the proposed project would be subject to the City's Site Plan Review process, and may also be subject to a separate environmental review process. Therefore, the IS/NOP determined that implementation of the proposed project would result in less than significant impacts related to changes in the exposure to hazards due to a design feature (Threshold 4.8.3) and inadequate emergency access (Threshold 4.8.4).

For the reasons stated above, these thresholds are not analyzed further in this Recirculated Draft EIR.

4.8.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures and would not include any project design features related to transportation and traffic. Although there are no compliance measures and project design features related to transportation and traffic, the LUE and UDE Goals, Strategies, and Policies are intended t to direct growth to areas served by transit and encourage compact pedestrian and bicycle friendly development patterns and urban design. The LUE and UDE Goals, Strategies, and Policies will be reinforced by the zoning code update that will implement the proposed project.

4.8.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following proposed LUE and UDE Goals, Strategies, and Policies are applicable to the analysis of Transportation and Traffic:

Land Use Element.

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.

STRATEGY No. 7: Implement the major areas of change identified in this Land Use Plan (Map LU-20).

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 7-9: Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.

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.

Urban Design Element.

STRATEGY No. 1: Improve function and connectivity within neighborhoods and districts.

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.

STRATEGY No. 2: Beautify and improve efficiency of corridors, gateways, and private and public 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.

Policy UD 8-3: Enhance walkable streets and neighborhoods to create pedestrian-friendly environments that support business vitality.

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 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 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 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 21-8: 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.

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.

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 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 40-2: Provide well-marked and convenient pedestrian access through parking areas to separate pedestrian and vehicular traffic.

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.

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.

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 43-2: 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.

4.8.8 Project Impacts

Threshold 4.8.1: Would the project conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Significant and Unavoidable.

4.8.8.1 Arterial Intersections

Significant and Unavoidable Impact. 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 LUE. 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. The RTP Travel Demand Model was modified to reflect the changes included in the proposed project. Although the projections of population and employment growth are not affected by the proposed project, the number of housing units is anticipated to increase. The proposed LUE will also affect the location of future land uses. 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.

Demographic trends such as population and employment growth are forecast to occur whether or not the proposed LUE/UDE 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 proposed project are compared to existing conditions. Table 4.8.E provides that comparison.

As Table 4.8.E shows, the traffic volume increase between Existing (2018) and the anticipated General Plan Anticipated Buildout (2040) With the Proposed Project scenario 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 4.8.E presented the CEQA-required analysis of proposed project impacts as compared to the existing conditions and indicates that impacts are potentially significant. As further discussed in Section 4.8.8.6, all of the physical improvements necessary for impacted intersections to function at an acceptable level are subject to constraints that render the addition of vehicle capacity infeasible. Therefore, impacts at these 48 intersections remain significant and unavoidable.

In order to provide an expanded comparison of the effects of the increased housing and locational change of land use concentration in the proposed project, Table 4.8.F compares the results of the General Plan Horizon Year (2040) No Project and the General Plan Anticipated Buildout (2040) With the Proposed Project scenarios. As Table 4.8.F shows, when compared to the previous plan, the proposed project results in some intersections operating better and some intersections operating poorer due to the redistribution of land uses.

Table 4.8.E: 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 4.8.E: 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 4.8.E: 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 4.8.E: 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 (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
WB = westbound
SR-91 = State Route 91
V/C = volume-to-capacity

A comparison of the effects of the proposed project and the existing LUE is included for informational purposes to help illustrate how the proposed project affects conditions in the horizon year. For the purposes of CEQA, however, impacts are determined when the proposed project is compared to existing conditions. As shown in Table 4.8.F, 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 the 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

As shown in Table 4.8.F, the following nine intersections would be adversely impacted in the proposed project to existing LUE 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

Table 4.8.F: 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 4.8.F: 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 4.8.F: 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 4.8.F: 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 (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

4.8.8.2 Congestion Management Program Intersections

Significant and Unavoidable Impact. The Los Angeles County CMP monitors 10 intersections within Long Beach. Table 4.8.G summarizes the performance of these CMP intersections under Existing (2018), General Plan Horizon Year (2040) No Project, and the General Plan Anticipated Buildout (2040) With Proposed Project conditions. As Table 4.8.G shows, future traffic growth that will occur without or with the project and the traffic redistribution resulting from the project are anticipated to result in LOS F conditions (with a 0.02 or greater increase in v/c) at 4 of the 10 CMP intersections in Long Beach and would, therefore, have a significant impact. As further discussed in Section 4.8.8.6, all of the physical improvements necessary for impacted intersections to function at an acceptable level are subject to constraints that render the addition of vehicle capacity infeasible. Therefore, impacts at these 4 CMP intersections are considered significant and unavoidable. The 4 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 4.8.G: 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 (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

4.8.8.3 Congestion Management Program Transit

Less than Significant Impact. Los Angeles County CMP Appendix D.8.4 provides guidelines on estimating transit ridership generated by a project. As shown on Figure 4.8.3, Long Beach is served by a robust transit network. The proposed project increases density of land uses adjacent to transit corridors 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 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 mile 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 General Plan Anticipated Buildout (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 and therefore would be conservative since the project is anticipated to increase the number of jobs and address housing demand providing opportunity for more residents to both work and live in Long Beach.

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.

4.8.8.4 Caltrans Ramp Intersections

Significant and Unavoidable Impact. 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.

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. 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. 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 4.8.H presents the analysis of these intersections in the Existing (2018), General Plan Horizon Year (2040) No Project, and General Plan Anticipated Buildout (2040) with Proposed Project conditions. As Table 4.8.H 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 proposed project. Two additional intersections function at LOS E or better in existing conditions but would function at LOS F in the future regardless of the proposed project.

However, according to the performance criteria established for this TIA (i.e., contribution of traffic to a facility operating in excess of its operational standard), the project is found to have potentially significant impacts on the following Caltrans intersections according to Caltrans impact criteria.

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

Because these Caltrans facilities are not within the City's jurisdiction and the City cannot compel Caltrans to implement mitigation, impacts at these six intersections are considered significant and unavoidable.

4.8.8.5 Caltrans Arterial and Freeway Facilities

Significant and Unavoidable Impact. The TIA analyzed freeway facilities including mainline segments, merging segments, and diverge segments. Many of these facilities were found to function beyond their designed LOS in existing conditions. On- and off-ramps in the study area were found to meet the design guidelines. The proposed project would contribute additional traffic volume, which would constitute a significant impact according to the established criteria. Because these Caltrans facilities are not within the City's jurisdiction and the City cannot compel Caltrans to implement improvements, impacts at these facilities are considered significant and unavoidable.

The TIA analyzed arterials that are on the State Highway System. The performance of these roadways was found to meet LOS standards meaning that vehicle delay on these facilities is a result of intersection performance.

Table 4.8.H: Freeway Ramp and State Highway Intersection Level of Service Summary

Intersection	Existing (2018)				General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project			
	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 4.8.H: Freeway Ramp and State Highway Intersection Level of Service Summary

Intersection	Existing (2018)				General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project			
	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 (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/mile/lane.
[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

4.8.8.6 Potential Physical Improvements

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. The 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 4.8.I.

The 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 rights-of-way could be infeasible or result in increased environmental impacts.

Physical improvements outside of existing rights-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 rights-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 4.8.I identifies whether these constraints are present at each of the impacted intersections.

As Table 4.8.I 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, analysis of freeway mainline segments show that up to 6 additional travel lanes might be necessary on freeways that are currently from 6–10 lanes. 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).

Table 4.8.I: 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

Table 4.8.I: Potential Mitigation for Impacts to Intersections

Intersection	Jurisdiction	Capacity Addition from Existing	Feasible	Reason Infeasible
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
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

Table 4.8.I: Potential Mitigation for Impacts to Intersections

Intersection	Jurisdiction	Capacity Addition from Existing	Feasible	Reason Infeasible
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 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

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 (MOP) Implementation Measures (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 an improved 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. Therefore, Mitigation Measure MM T-1 is recommended to reduce the level of traffic impacts.

Mitigation Measure MM T-1 would require consideration of feasible traffic improvements at the time individual projects are proposed. If individual projects contribute to transportation impacts for which physical improvement is feasible, then physical improvements would be implemented and transportation impacts would be reduced. However, if potential physical improvements are not feasible, then transportation impacts would remain significant. Therefore, implementation of the proposed project would result in a significant and unavoidable impact related to a program, plan, ordinance, or policy addressing the circulation system.

Threshold 4.8.2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

Less than Significant.

State CEQA Guidelines Section 15064.3 subdivision (b) provides revised criteria for analyzing transportation impacts consistent with SB 743, which has been interpreted as removing vehicle LOS from consideration under CEQA. In lieu of vehicle LOS, VMT must be adopted as the measure of transportation impact by July 1, 2020. As discussed above, Section 15064.3 subdivision (b) allows a lead agency to choose how to the evaluate a project's VMT in absolute terms, per capita, per household, or in any other measure. The TIA included 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.

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 4.8.J 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. 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.

Table 4.8.J: 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

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 Project (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 proposed project than with the current distribution of land uses, as explained further below.

Table 4.8.K shows that the land use changes proposed in the LUE/UDE 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 proposed project 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 (e.g. to the grocery store) than the same number of people living in less-crowded, separate housing. Because the proposed project 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 proposed project. The efficiency of the distribution of land uses in the LUE/UDE 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 LUE).

Table 4.8.K: Long Beach VMT

	Existing Base Year	2040 No Project with Existing LUE	2040 with Proposed Project	Percentage Change	
				From Existing LUE[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

The State of California has concurrent goals of reducing VMT and increasing housing supply to improve affordability and accommodate the workforce. The proposed project increases the number of housing units to reduce overcrowding in Long Beach. The efficiency of the location of land uses in the LUE/UDE (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. Because the measures of VMT in absolute terms and per capita decrease from existing conditions with the proposed project and the measure of VMT per household decreases from existing conditions and from the current LUE, it is determined that the proposed project would have a less than significant impact related to *State CEQA Guidelines* Section 15064.3 subdivision (b), analyzing transportation impacts consistent with SB 743.

4.8.9 Mitigation Measures

MM T-1 Prior to approval of any discretionary 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.

4.8.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probably future projects within the cumulative impact area for traffic and circulation. The project proposes an update to the City's General Plan that would affect development patterns throughout the City through the horizon year of 2040. As such, because the proposed project is a City-wide policy action that would facilitate future development throughout the entire City, the proposed project itself is cumulative in nature.

Under the anticipated General Plan (2040) plus Proposed Project build-out conditions, 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. Potential physical improvements at each impacted location was considered against potential constraints such as the intersection being located outside of the City's jurisdiction, which eliminates the City's authority to compel physical improvements or physical improvements being located outside of the existing rights-of-way, which could be infeasible or result in increased environmental impacts. Furthermore, the effect of the Implementation Measures in the Mobility Element in reducing traffic volume cannot be guaranteed to reduce impacts. Because measures to increase vehicle capacity or reduce vehicle volume cannot be guaranteed and may not be feasible, the impacts identified above are considered cumulatively significant and unavoidable for the horizon year of 2040.

4.8.11 Level of Significance after Mitigation

As identified in Table 4.8.I, mitigations in the form of physical improvements are not feasible for the identified intersections to function at LOS D or better. Therefore, Mitigation Measure MM T-1 is the only feasible mitigation. After implementing Mitigation Measure MM 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.

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4.9 UTILITIES

4.9.1 Introduction

This section describes the public utility providers currently serving the planning area and evaluates the potential impacts to solid waste, wastewater, water, and telecommunications services within the City of Long Beach (City) as a result of implementation of the General Plan Land Use and Urban Design Elements Project (proposed project). This section is based on multiple data sources, including the Conservation Element (1973) of the City's General Plan and the proposed General Plan Land Use and Urban Design Elements (March 2018) (provided in Appendix H), as well as coordination with potentially affected utility providers. Specific references are identified within the subsection for each respective issue. This section addresses the following utility service systems (service providers are noted in parenthesis):

- Solid Waste (Los Angeles County Sanitation Districts [LACSD])
- Wastewater (LACSD)
- Water (Long Beach Water Department [LBWD])
- Telecommunications (Cable TV and Telephone Service Providers)

4.9.2 CEQA Baseline

At the time the Notice of Preparation (NOP) was published (in May 2015), the Southern California Association of Governments (SCAG) had not yet approved the Final 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Therefore, socioeconomic data for the baseline year of 2012 and growth projections for the City for year 2040 were utilized in the 2016 Draft EIR when evaluating impacts with respect to utilities. Since the release of the Draft 2016 EIR, SCAG approved the Final 2016 RTP/SCS, which included minor updates to 2012 baseline socioeconomic data and 2040 growth projections for the City. Additionally, the Final 2016 RTP/SCS updated the baseline year for socioeconomic data for the County of Los Angeles (County) from 2012 to 2015 and made minor updates to 2040 growth projections for the County.[1] Therefore, the inclusion of socioeconomic data from years 2012 and 2015 for the City and County, respectively, is appropriate because the Final 2016 RTP/SCS has been formally adopted by SCAG. There is substantial evidence to support that the use of SCAG RTP/SCS data as the baseline for impacts with respect to utilities is appropriate because it is consistent with regional growth forecasts for the City, the County, and the SCAG region.

4.9.3 Methodology

In order to evaluate the environmental impacts associated with the anticipated General Plan build out scenario (2040), citywide solid waste, wastewater, and water demands were modeled based on generation rates obtained from applicable service providers. These generation rates were applied to both the existing (2018) land uses and the 2040 PlaceTypes proposed as part of the project. The net difference between the 2040 demand for utilities was then compared with the existing demand to

[1] Please refer to Section 4.6, Population and Housing, for tables and further discussion related to existing and projected socioeconomic growth in both the City and County through year 2040.

generate the project-related increase in demand for solid waste, wastewater treatment, and water facilities. This increase was then compared with the projected capacity of applicable service providers to continue to service existing and new development in the City through year 2040.

The utility demands associated with implementation of new development envisioned under the proposed project are representative of a "worst-case" scenario. The bulk of projected new housing units through 2040 is anticipated to alleviate overcrowding of existing housing units in the City with current Long Beach residents. Therefore, utility usage projections used throughout this EIR section are conservative since they do not consider the large number of existing residents that will be served by new housing units that are already existing utility consumers. Additionally, new residential units are impacted by several factors that would result in decreased water usage and wastewater generation. For example, the California Green Building Standards Code (CALGreen Code) requires specific sustainability features that would reduce water consumption and wastewater generation, including the installation of water-conserving plumbing fixtures and fittings, compliance with the California Department of Water Resources' (DWR) Model Water Efficient Landscape Ordinance (MWELO), installation of "smart" weather-based irrigation controllers, and utilization of bubblers or low-flow sprinklers for non-turf areas. Further, new residential units anticipated with the anticipated General Plan build out scenario (2040) would be comprised mostly of multi-family residential units, which use less water as compared to single-family units due to the presence of less landscaped area per household. Lastly, the City's proposed Climate Action and Adaptation Plan (CAAP) will focus on addressing greenhouse gas (GHG) emissions reductions, but will also function to reduce utility draw as a result of specific control measures related to conservation. Overall, the analysis contained in this section is conservative due to the factors stated above.

4.9.4 Existing Environmental Setting

4.9.4.1 Solid Waste

Solid waste collection services are provided by the City's Environmental Services Bureau; however, the City is also a member of the LACSD. Based on available disposal reporting data from the California Department of Resources Recycling and Recovery (CalRecycle; formerly known as the California Integrated Waste Management Board [CIWMB]) website,[1] it was estimated that the annual tonnage of solid waste generated by all sources in the City in 2017 was 302,541 tons per year (or 605,082,000 pounds per year).

A majority of the City's solid waste is sent to the Southeast Resource Recovery Facility (SERRF), a publicly owned solid waste management facility located at 120 Pier S Avenue in Long Beach. This facility is owned by the SERRF Joint Powers Authority (JPA) and is operated by Covanta Long Beach Renewable Energy Corporation. The SERRF is a refuse-to-energy transformation facility that reduces the volume of solid waste it receives by approximately 80 percent using mass burn technology. Residential and commercial solid waste is combusted in high temperature boilers to produce steam, which in turn is used to run the turbine generator to produce electrical energy. The SERRF produces 36 megawatts (MW) of electricity daily from processing approximately 1,290 tons (2,580,000

[1] California Department of Resources Recycling and Recovery (CalRecycle). California Solid Waste Statistics. Website: https://www2.calrecycle.ca.gov/LGCentral/Disposal Reporting (accessed October 3, 2018).

pounds) of municipal solid waste. Electricity produced on site is used to power the facility, and the remaining electricity is sold to Southern California Edison (SCE) for distribution to its customers.[1]

The SERRF receives the greatest tonnage of solid waste of all disposal sites located within the City. Solid waste from the existing uses in the City is collected and trucked to the SERRF where it is processed. The SERRF performs "front-end" and "back-end" recycling by recovering items such as white goods (i.e., large appliances) prior to incineration and collection of metals removed from the boilers after incineration. Each month, an average of 825 tons (1,878,338 pounds) of metal are recycled rather than sent to a landfill. The Solid Waste Facility Permit for the SERRF identifies that the design capacity of this facility is 2,240 tons per day (4,480,000 pounds).[2] As described above, the SERRF currently processes approximately 1,290 tons per day (2,580,000 pounds). In 2016, approximately 196,930 tons (434,156,333 pounds), or 47 percent,[3] of solid waste disposed of at the SERRF originated from Long Beach residents and businesses.

In 2013, the Puente Hills Landfill closed after 56 years of operation. As such, solid waste that is generated in the City of Long Beach but is not sent to the SERRF (i.e., would damage or threaten to damage combustion units or otherwise adversely affect maintenance of the SERRF, present a substantial endangerment to the health or safety of the public or SERRF employees, cause any permit requirement or condition to be violated, or exceed the materials-handling capacity of the combustion feed system[4]) is taken to landfills in Orange, San Bernardino, and Riverside Counties.[5] According to LACSD, since the closure of the Puente Hills Landfill, residents and commercial haulers are encouraged to use other nearby LACSD's facilities for disposal and recycling. Alternative disposal options include two ramped-up Material Recovery Facilities (MRF) run by LACSD: the Downey Area Recycling and Transfer Facility (DART) in Downey, and the Puente Hills MRF, situated at the base of the Puente Hills Landfill. Additionally, the Mesquite Regional Landfill, completed in 2011 and owned and operated by LACSD, is permitted to receive up to 20,000 tons (434,156,333 pounds) of municipal solid waste per day, with a total capacity of 600 million tons of municipal waste.[6] LACSD has taken the lead role in implementing the Waste-by-Rail system, a remote disposal program for Los Angeles County. The Waste-by-Rail system will provide long-term disposal capacity to replace local landfills as they reach capacity and close. The starting point of the Waste-by-Rail system will be MRFs or transfer stations located throughout Los Angeles County. Residual waste from the MRFs or

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1 Los Angeles County Sanitation Districts (LACSD), Southeast Resource Recovery Facility (SERRF) Brochure. Website: http://lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp (accessed October 4, 2018).

2 CalRecycle. Solid Waste Information System (SWIS) Facility Detail. Southeast Resource Recovery Facility. Solid Waste Facility Permit, Permit No. 19-AK-0083. Website: https://www2.calrecycle.ca.gov/swfacilities/Directory/19-AK-0083 (accessed October 04, 2018).

3 County of Los Angeles. 2016. Countywide Integrated Waste Management Plan, 2016 Annual Report, Figure 18: Southeast Resource Recovery Facility.

4 Long Beach Gas and Oil. Acceptable Waste. Website: http://www.longbeach.gov/lbgo/about-us/serff/acceptable-waste/ (accessed July 10, 2018).

5 Los Angeles Daily News. *Puente Hills Landfill Will Close Forever Thursday.* Website: http://www.dailynews.com/environment-and-nature/20131031/puente-hills-landfill-will-close-forever-thursday (accessed December 22, 2015).

6 LACSD. Solid Waste & Landfills. Waste-By-Rail. Website: http://www.lacsd.org/solidwaste/wbr/default.asp (accessed July 10, 2018).

transfer stations will be transported via rail to remote landfills for disposal. Through the available MRFs run by LACSD, the use of active landfills in Orange, San Bernardino, and Riverside Counties (refer to Table 4.9.A, below), and plans for future implementation of the Waste-by-Rail system, Los Angeles County is currently able to meet existing and projected landfill needs.

Table 4.9.A: Capacity of Landfills Serving the City of Long Beach (2018)

Landfill and Location	Remaining Capacity	Maximum Permitted Throughput (tons/day)	Estimated Closing Date
Azusa Land Reclamation Co. Landfill (Azusa, CA)	51,512,201 cubic yards	8,000	01/01/2045
Burbank Landfill Site No. 3 (Burbank, CA)	5,933,365 cubic yards	240	01/01/2053
Calabasas Landfill (Agoura, CA)	14,500,000 cubic yards	3,500	01/01/2029
Chiquita Canyon Sanitary Landfill (Castaic, CA)	8,617,126 cubic yards	6,000	11/24/2019
Lancaster Landfill and Recycling Center (Lancaster, CA)	14,514,648 cubic yards	5,100	03/01/2044
Pebbly Beach (Avalon) Disposal Site (Avalon, CA)	65,520 cubic yards	49	01/01/2020
San Clemente Island Landfill (San Clemente Island, CA)	209,816 cubic yards	10	01/01/2032
Savage Canyon Landfill (Whittier, CA)	9,510,833 cubic yards	3,350	12/31/2055
Scholl Canyon Landfill (Los Angeles County, CA)	9,900,000 cubic yards	3,400	04/01/2030
Southeast Resource Recovery Facility (Long Beach, CA)	2,240 tons/day (permitted capacity)	2,240	N/A
Sunshine Canyon City/County Landfill (Los Angeles County, CA)	96,800,000 cubic yards	12,100	12/31/2037

Source: California Department of Resources Recycling and Recovery (CalRecycle). Solid Waste Information System (SWIS) Facility/Site Listing. Website: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx (accessed October 11, 2018).
N/A = not available

4.9.4.2 Wastewater

The LBWD is responsible for operating and maintaining approximately 765 miles of sanitary sewer lines in the City. Through these sanitary sewer lines, the LBWD delivers over 40 million gallons per day (mgd) of wastewater to LACSD facilities located in the region. LACSD's service area encompasses approximately 824 square miles and includes 78 cities and unincorporated areas within Los Angeles County. Within the LACSD service area, there are approximately 9,500 miles of local collector and/or lateral sewer lines that are owned and operated by the cities and the County that are tributary to the LACSD wastewater collection system. LACSD owns, operates, and maintains approximately 1,400 miles of sewers, 48 active pumping plants, and 11 wastewater treatment plants.[1] The majority of the wastewater generated in the City is delivered to the Joint Water Pollution Control Plant

[1] LACSD. About the Sanitation Districts. Website: http://www.lacsd.org/aboutus/default.asp (accessed July 10, 2018).

(JWPCP) of LACSD (located at 24501 S. Figueroa Street in the City of Carson) with the remaining portion delivered to the Long Beach Water Reclamation Plant (WRP) of LACSD (located at 7400 East Willow Street in Long Beach).

The JWPCP provides both primary and secondary treatment of wastewater. Solids collected in both primary treatment and secondary treatment are processed in anaerobic digestion tanks where bacteria breaks down organic material and produces methane gas. After digestion, the solids are dewatered and hauled off site to composting, land application, and landfill disposal. Methane gas generated in the anaerobic digestion process is used to produce power and a digester heating steam within an on-site total energy facility that utilizes gas turbines and waste-heat recovery steam generators that are used to run the facility. The plant serves a population of approximately 3.5 million people throughout the County. Prior to discharge, the treated wastewater is disinfected with sodium hypochlorite and sent to the Pacific Ocean through a network of outfalls extending 1.5 miles off the Palos Verdes Peninsula to a depth of 200 feet (ft). Currently, the JWPCP treats approximately 300 mgd and has a total permitted design capacity of 400 mgd.

The Long Beach WRP provides primary, secondary, and tertiary treatment and serves a population of approximately 250,000. Tertiary treatment produces high-quality recycled water as the process includes the removal of nutrients such as phosphorus and nitrogen and nearly all suspended and organic matter from wastewater. Approximately 6 mgd of recycled water produced at the Long Beach WRP is used at over 60 sites. Re-uses include landscape irrigation of schools, golf courses, parks, and greenbelts by the City of Long Beach, repressurization of oil-bearing strata off the coast of Long Beach, and the replenishment of the Central Basin groundwater supply from water processed at the Leo J. Vander Lans Advanced Water Treatment Facility. The remainder is discharged into Coyote Creek. The Long Beach WRP treats an average of approximately 13 mgd and has a total permitted capacity of 25 mgd.[1]

4.9.4.3 Water Service

The LBWD owns, operates, and maintains 29 active groundwater wells, 907 miles of water mains, and 6,501 fire hydrants. The LBWD's entire infrastructure is used to provide water service to approximately 90,000 active customer accounts within an approximate 50-square-mile service area in the City.[2]

The LBWD receives approximately 50 percent of its domestic water supply from existing groundwater supplies within the Central Basin[3] and approximately 50 percent from imported water purchased from the Metropolitan Water District of Southern California (MWD).

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1 Adriana Raza, Sanitation Districts of Los Angeles (LACSD). Telephone conversation on October 18, 2018.

2 Long Beach Water Department (LBWD). 2018. Budget Summary Fiscal Year 2019, Website: http://www.lbwater.org/sites/default/files/file_attach/FY%2019%20Budget%20Summary_Reduced.pdf (accessed October 5, 2018).

3 The Central Subbasin occupies a large portion of the southeastern part of the Coastal Plain of Los Angeles Groundwater Basin and is commonly referred to as the "Central Basin."

Groundwater. LBWD has the rights to pump 32,692 acre-feet per year (af/yr) of groundwater from the Central Basin Aquifer. The Central Basin was adjudicated by the Los Angeles County Superior Court in the early 1960s to allocate annual pumping rights due to serious over-drafting in the mid-1900s. However, because annual pumping rights allocated in the Central Basin Judgment exceed the natural yield of the basin, the Judgment also charges the Water Replenishment District of Southern California (WRD) with the responsibility of replenishing the basin. Parties extracting water from the basin pay an assessment to WRD on a per acre-foot (af) extracted basis and the revenue generated is used by WRD to replenish and protect the basin. These replenishment efforts coupled with strict extraction limitations make groundwater extraction from the Central Basin a very reliable source of water for the City even during multiple consecutive dry year conditions.[1]

Imported Water. The LBWD purchases imported water from MWD as one of its member agencies. The MWD has documented, in its *2015 Regional Urban Water Management Plan* (MWD 2015 Regional UWMP), adopted in June 2016, that its supplies will be sufficient to meet demands in multiple dry years. The LBWD's water demand is projected to drop below the 100 gallons per capita per day threshold at which the current MWD allocation plan guarantees a full water allocation. Furthermore, the Metropolitan Water District Act, a State law, entitles LBWD to a "preferential right" of MWD supplies in an amount that is greater than the projected need of the LBWD for those supplies. As such, LBWD's access to MWD supplies is considered to be reliable for the next 24 years.[2]

Recycled Water. The LBWD has been providing recycled water since the 1980s in an effort to replace the use of potable water in the City.[3] Recycled water is produced at the Long Beach WRP, which is operated by the LACSD. Recycled water provided by the LBWD is primarily used by public and private irrigation customers (e.g., parks, schools, golf courses, cemeteries, and garden nurseries) and a consortium of oil companies (e.g., Texaco, Humble Oil, Union Oil, Mobil Oil, and Shell Oil companies; also referred to as THUMS), which use the recycled water for oil- extracting processes. According to the UWMP, recycled water supplies are considered to be reliable for at least the next 22 years.[4]

Conservation. The LBWD maintains and implements several water conservation programs such as the turf replacement program, the residential and commercial rebate programs for water-saving devices, the water rate structure, the system loss program, and public education and outreach programs to keep customers informed. Although water conservation is not always thought of as water supply, water conservation directly offsets the need to develop new water supplies. These conservation programs have resulted in a 35-percent reduction in per capita water use since the 1980s.

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1 Long Beach Water Department (LBWD). 2016. *Long Beach Water 2015 Urban Water Management Plan*. Adopted June 2, 2016.

2 Ibid.

3 LBWD and Water Replenishment District of Southern California. *Final Recycled Water Master Plan*. November 2010.

4 A new stormwater capture and filtration facility (Long Beach Municipal Urban Storm Water Treatment [LB MUST] was recently approved by the City and may expand the availability of recycled water in the future. The exact timing and amounts are not known at this time, and therefore, are not included in this analysis.

Existing water supply and water supply projections for the City through year 2040 are shown in Table 4.9.B. As illustrated in this table, the major sources of water for the LBWD include imported water purchased from the MWD, groundwater pumped and treated by the LBWD, and recycled water produced at the Long Beach WRP.

Table 4.9.B: Water Supplies – Current and Projected (af/yr)

Water Purchased From	2015	2020	2025	2030	2035	2040
Groundwater	32,693	33,001	33,501	34,001	34,501	35,001
Imported	35,100	35,100	35,100	35,100	35,100	35,100
Recycled Water	9,190	9,190	9,190	9,190	9,190	9,190
Total	**76,983**	**77,291**	**77,791**	**78,291**	**78.791**	**79,291**

Source: Long Beach Water Department (LBWD). 2016. *2015 Urban Water Management Plan,* Table 12: Existing and Projected Water Supplies (in acre-feet).
af/yr = acre-feet per year

4.9.4.4 Storm Drain

The City currently has an intricate storm drainage system, which consists of streets and gutters, catch basins, and underground pipes, ditches, streams and creeks, pump stations, and channels/ rivers. This system carries stormwater and runoff away from impermeable surfaces in the City to designated drainage areas, including the Los Angeles and San Gabriel Rivers. In order to ensure proper function of the City's storm drain system, the City performs bi-annual maintenance work on the system, in addition to emergency repair work on an as-needed basis.

4.9.4.5 Telecommunications

While there are a number of cable and telephone service providers available to residents in the planning area, the primary service providers in the planning area are Spectrum, AT&T U-Verse, and Frontier. Together, these three service providers hold a franchise issued by the State's Public Utilities Commission to provide services to residents in the City.[1]

In addition, the City owns approximately 60 miles of fiber optic cable in the City. This fiber optic network connects the Long Beach Airport, the Fire Headquarters, and Police Field Support within the planning area. The City intends on expanding the capacity of existing facilities and adding more fiber optic facilities to address the growing demand for faster cable speeds, greater bandwidths, more reliable data transmission, and to accommodate more flexibility for the future.

4.9.5 Regulatory Setting

4.9.5.1 Federal Policies and Regulations

Federal Water Pollution Control Act. The Federal Water Pollution Control Act requires discharges (from point and non-point sources) into navigable water to meet stringent National Pollutant Discharge Elimination System (NPDES) permit standards. The U.S. Environmental Protection Agency

[1] City of Long Beach. Cable Television and Telephone Service. Website: http://www.longbeach.gov/ti/telecommunications (accessed January 21, 2019).

(EPA) has published regulations establishing requirements for application of stormwater permits for specified categories of industries, municipalities, and certain construction activities. The regulations require that discharges of stormwater from construction activity of 1.0 acre or more must be regulated and covered by an NPDES permit. When a construction area exceeds 1.0 acre in size, the applicant must develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to control non-point pollution.

Federal Aviation Administration (FAA) Notification. Notification to the FAA is required for the construction of any tower or the alteration of an antenna structure that is registered with the Commission's Antenna Structure Registration (ASR) system. Generally, towers that meet certain height and location requirements (e.g., are more than 200 ft above ground level and/or are located within proximity of an airport) require notice with the FAA and ASR system and must register with the FCC. A final determination of "no hazard" is required from the FAA prior to any construction or alteration of facilities.

Federal Communications Commission (FCC) Antenna Structure Registration. Applicants proposing to construct or alter antenna structures must register such facilities with the FCC in compliance with Part 17 of the FCC's Rules. An ASR registration must not occur until an applicant has first secured a "no hazard" determination from the FAA. If the FCC accepts the application, a registration is issued, which typically includes the FAA's "no hazard" marking and/or lighting specifications and which assigns the antenna an ASR number. Once an antenna is registered, the owner is responsible for compliance with applicable FAA and FCC regulations. No changes to the specifications in the ASR system are permitted without prior authorization from both the FAA and FCC. Once the antenna structure is constructed or altered, the owner must file a Notice of Completion of Construction or Alteration with the FAA and a form with the FCC notifying both agencies that the construction has been completed.

4.9.5.2 State Policies and Regulations

Assembly Bill 939: Solid Waste Reduction. The California Integrated Waste Management (CIWM) Act of 1989 (Assembly Bill [AB] 939) was enacted as a result of a national crisis in landfill capacity, as well as a broad acceptance of the hierarchy (reduce, reuse, recycle, environmentally sound landfilling, and transformation) as the desired approach to solid waste management. AB 939 mandated local jurisdictions to meet waste diversion goals of 25 percent by 1995 and 50 percent by 2000, and established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. Other elements included encouraging resource conservation and considering the effects of waste management operations. The diversion goals and program requirements are implemented through a disposal-based reporting system by local jurisdictions under CIWMB regulatory oversight. Since the adoption of AB 939, landfill capacity has increased. Regional capacity problems still exist, but capacity is no longer considered the statewide crisis it once was. AB 939 has achieved substantial progress in waste diversion, program implementation, solid waste planning, and protection of public health and safety and the

environment from the operation of landfills and solid waste facilities.[1] The City offers recycling programs for both commercial and residential uses.

California Integrated Waste Management Act of 1989. The CIWM Act of 1989 (California Public Resource Code [PRC] Division 30), enacted through AB 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of waste by 2000 (PRC Section 41780). The State determines compliance with this mandate to divert 50 percent of generated waste (which includes both disposed and diverted waste) through a complex formula. This formula requires cities and counties to conduct empirical studies to establish a base-year waste generation rate against which future diversion is measured. The actual determination of the diversion rate in subsequent years is arrived at through deduction, not direct measurement; instead of counting the amount of material recycled and composted, the city or county tracks the amount of material disposed at landfills, then subtracts the disposed amount from the base-year amount. The difference is assumed to be diverted (PRC 41780.2).

Assembly Bill 75. AB 75, passed in 1999, and the State Agency Model Integrated Waste Management Act (Chapter 764, Statutes of 1999, Strom-Martin) took effect on January 1, 2000. This bill added new provisions to the PRC, mandating that State agencies develop and implement an Integrated Waste Management Plan (IWMP) that outlines the steps to be taken to achieve the required waste diversion goals.

Current statutes require all State agencies and large facilities to divert at least 50 percent of their solid waste from disposal facilities on and after January 1, 2004. The law also requires that each State agency and large facility submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs; it also mandated that community service districts providing solid waste services report disposal and diversion information to the city, county, or regional agency in whose jurisdiction they are located. In addition to the waste diversion goals, all State agencies are required to buy recycled materials from 12 different categories ranging from paper and plastic to paint, solvents, and lubricating oils.

Senate Bill 1016. The Per Capita Disposal Measurement System Act (Senate Bill [SB] 1016) changed the way State agencies and local governments measure their progress toward meeting the statutory waste diversion mandates. State agencies and large State facilities now use per capita disposal as an indicator of their compliance with the 50 percent waste diversion requirement. Compliance is also determined by diversion program implementation.

Senate Bill 1374. SB 1374 requires that the annual report submitted to CalRecycle include a summary of the progress made in the diversion of construction and demolition waste materials. In addition, SB 1374 requires CalRecycle to adopt a model ordinance suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition waste materials from landfills by March 1, 2004. Local jurisdictions are not required to adopt their own construction and demolition ordinances, nor are they required to adopt CalRecycle's model by default. However,

[1] CalRecycle. AB 939 in the New Millennium. Website: http://www.calrecycle.ca.gov/Archive/21stCentury/Events/FutureMar99/issues1.htm (accessed July 11, 2015).

adoption of such an ordinance may be considered by CalRecycle when determining whether to impose a fine on a jurisdiction that has failed to implement its Source Reduction and Recycling Element (SRRE).

Assembly Bill 341. AB 341, enacted in 2011, changed the due date of the State agency waste management annual report to May 1 beginning in 2012. The bill makes a legislative declaration that is the policy goal of the State that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by 2020.

Water Conservation in Landscaping Act. To ensure adequate supplies are available for future uses, and to promote the conservation and efficient use of water, local agencies are required to adopt a water-efficient landscape ordinance. When such an ordinance has not been adopted, a finding as to why (based on the climatic, geologic, or topographical conditions) such an ordinance is not necessary must be adopted. In the absence of such, an ordinance drafted by the State of California applies within the affected jurisdiction. The City of Long Beach implements water-efficient landscaping standards set forth by the State Model Water Efficient Landscape Ordinance (MWELO), (Chapter 21.42.035 of the City's Municipal Code), which establishes water conservation requirements for all projects that require a Site Plan Review; new residential, commercial, industrial, institutional and public agency landscape projects with an aggregate landscape area equal to or greater than 500 square feet (sf) requiring a landscape plumbing permit; rehabilitated residential, commercial, industrial, institutional, and public agency landscape projects with an aggregate landscape area equal to or greater than 2,000 sf requiring a landscape plumbing permit; cemeteries; existing landscapes; and public facilities and public rights-of-way.[1]

Water Recycling in Landscaping Act. The Water Recycling in Landscaping Act requires that a water producer capable of providing recycled water that meets certain conditions notify local agencies eligible to receive the recycled water. It also requires that necessary infrastructure be provided to support the delivery of recycled water.

State Water Code Sections 13550–13556. These sections of the State Water Code specify that local, regional, or State agencies shall not use water from any source for non-potable uses if suitable recycled water is available as provided in Section 13550 of the State Water Code.

State Water Resources Control Board. Operation of the JWPCP and the Long Beach WRP are subject to regulations set forth by the California Department of Health Services (DHS) and the State Water Resources Control Board (SWRCB). NPDES permits are required for operators of municipal separate storm sewer systems (MS4s), construction projects, and industrial facilities who discharge to surface waters within the City.

Urban Water Management Planning Act. The Urban Water Management Planning Act (UWMPA) of 1983 requires preparation of a strategy that plans for water supply and assesses the reliability of water sources over a 20-year period in 5-year increments; identifies and quantifies adequate water

[1] City of Long Beach Municipal Code, *Section 21.42.03.* City of Long Beach, codified through Ordinance No. ORD-18-0021, enacted August 14, 2018 (Supp. No. 21, Update 2).

supplies for existing and future demands under normal, single-dry, and multiple-dry years; and implements conservation controls to ensure the efficient use of urban water supplies. Requirements set forth in the UWMPA apply to every urban water supplier with 3,000 customers or more or that provides over 3,000 af/yr of water to ensure reliability in water service in order to meet the needs of customers during normal, dry, and multiple-dry years.

Governor's Drought Declaration. On January 17, 2014, Governor Brown proclaimed a State of Emergency asking Californians to reduce water use by 20 percent and directing State officials to take all necessary actions to make water available. Additional key measures in the proclamation include the following: directing water suppliers to implement water shortage contingency plans, ordering the SWRCB to consider petitions for consolidation of places of use for the State Water Project and Central Valley Project in an effort to streamline water transfers and exchanges between water users, directing the DWR and the SWRCB to accelerate funding for projects that would have broken ground in 2014 and would enhance water supplies, ordering the SWRCB to notify water rights holders across the State that they may be directed to cease or reduce water diversions based on water shortages, and requiring the SWRCB to consider modifying requirements for releases of water from reservoirs or diversion limitations to conserve water in reservoirs and improve water quality.

Following the Governor's drought declaration, the DWR announced on January 31, 2014, that if current dry conditions persist, customers would receive no deliveries from the State Water Project. Deliveries to agricultural districts with long-standing water districts were determined to be at a risk for a potential 50 percent reduction.

On April 25, 2014, the Governor issued an executive order to accelerate actions intended to reduce harmful effects of the drought and called on Californians to redouble their efforts to conserve water. On July 15, 2014, the SWRCB approved an emergency regulation requiring water conservation for outdoor water use. Subsequently, on December 22, 2014, Governor Brown issued Executive Order (EO) B-28-14, which extends the operation of the provisions outlined in the April 2014 Executive Order.

In addition, on April 1, 2014, the Governor issued EO B-29-15, which ordered the SWRCB to impose restrictions to achieve a 25 percent reduction in potable urban water usage through the end of February 2016, directed the DWR to lead a statewide initiative to replace 50 million sf of lawns and turf with drought-tolerant landscapes, and directed the California Energy Commission (CEC) to implement a statewide rebate program for the replacement of inefficient household devices.

The LBWD has been found compliant with the EO and SWRCB rules, exceeding the required reduction in water usage.

Following unprecedented water savings and plentiful winter rain and snow, Governor Brown lifted the drought emergency declaration in April 2017 via EO B-40-17, which lifted the drought emergency in all counties except for Fresno, Kings, Tulare, and Tuolumne, but maintained water reporting requirements and prohibitions on wasteful practices (e.g., watering during or after rainfall, hosing off sidewalks, and irrigating ornamental turf on public street medians).

Senate Bill 610. Enacted in 2001 (effective January 1, 2002), SB 610 Water Supply Assessment (WSA) added Section 21151.9 to the California PRC requiring that any proposed "project," as defined in Section 10912 of the State Water Code, comply with Water Code Section 10910, et seq. Commonly referred to as a "SB 610 Water Supply Assessment," Water Code Section 10910 et seq. outlines the necessary information and analysis that must be included in an Environmental Impact Report (EIR) to ensure that a proposed land development has sufficient water supply to meet existing and planned water demands over a 20-year projection.

The standard for the certainty and reliability of water supplies sufficient to meet the demands of the proposed development is more exacting then that required for the UWMP. Ultimately, because the SB 610 WSA is a source document for an EIR prepared for a proposed project pursuant to the California Environmental Quality Act (CEQA), it must provide substantial evidence showing that sufficient water will be available to meet water demands for the water purveyor's existing and planned land uses over a 20-year planning horizon.

The initial question in conducting an SB 610 WSA is whether there is a "project" that is subject to the SB 610 WSA process. According to the SB 610 WSA requirements, a "project" is defined as any of the following:

- Residential development of more than 500 dwelling units;
- Shopping center or business establishment employing more than 1,000 persons or having more than 500,000 sf of floor space;
- Commercial office building employing more than 1,000 persons or having more than 250,000 sf of floor space;
- Hotel or motel, or both, having more than 500 rooms;
- Industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- Mixed-use project that includes one or more of the projects specified above; or
- Project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project.

If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

The proposed project is a planning/policy action and does not constitute a "project" under SB 610 requirements. As such, the project does not require preparation of a WSA. However, future projects

facilitated by approval of the proposed LUE would be subject to the SB 610 WSA requirements and may be required to prepare WSAs (refer to Section 4.9.8, Project Impacts, later in this section for further discussion).

Senate Bill 7. SB X7-7 was enacted in 2009, authorizing the DWR to prepare a plan implementing urban water conservation requirements. SB X7-7, otherwise referred to as the 20x2020 Water Conservation Plan, requires urban water suppliers to adopt a water conservation target of 20 percent reduction in urban capita water use by year 2020 compared to a 2005 baseline. SB X7-7 also requires agricultural water providers to prepare water management plans, measure water deliveries, and implement water efficiency measures.

Assembly Bill 2788. Under AB 2788, a wireless telecommunications collocation facility (i.e., the placement or installation of wireless facilities, including antennas and related equipment, or adjacent to a wireless collocation facility) is subject to a city or county discretionary permit and is obligated to comply with specific criteria. A collocation facility is a permitted use not subject to a discretionary permit. AB 2788 would permit the use of a small cell without a discretionary permit or aesthetic review in all zoning districts, and would instead only be subject to a building or administrative permit, as applicable. In addition, AB 2788 requires that a city or county cannot require an escrow deposit for the removal of a wireless telecommunications facility or any component thereof, unreasonably limit the duration of any permit for a wireless telecommunications facility, or require that all wireless telecommunications facilities be limited to sites owned by parties within the jurisdiction of the city or county. Moreover AB 2788 establishes specific timeframes by which a city or county must review a permit and/or renew a permit for wireless telecommunications facilities.

California Public Utilities Commission Decision 18-04-007. On April 27, 2018, the California Public Utilities Commission (CPUC) issued Decision 18-04-007, which amended the Right-of-Way rules to provide competitive local exchange carriers with expanded access to public utility infrastructure for the purpose of installing antennas and wireless telecommunications equipment. Specifically, the CPUC mandated that the use of rights-of-way areas shall be limited to those *necessary or useful* for the provision of telecommunication services, thereby requiring a nexus between the installation and the provision of a telecommunication service.

Local Policies and Regulations.

Municipal NPDES Permit. The City of Long Beach is subject to the *Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach* (Permit No. R4-2014-0024, National Pollutant Discharge Elimination System (NPDES) No. CAS004003) (MS4 Permit), which was approved February 6, 2014, and became effective on March 28, 2014. This MS4 Permit supersedes Order No. 99-060 issued in 1999. To implement the requirements of the 1999 MS4 Permit, the City developed the Long Beach Storm Water Management Program (LBSWMP), a comprehensive program of practices and activities aimed at reducing or eliminating stormwater pollutants from new development to the maximum extent practicable. On September 8, 2016, the Long Beach MS4 Permit was amended to incorporate

modifications consistent with the revised Los Angeles River Watershed Total Maximum Daily Load (TMDL), and the amendments became effective upon adoption on November 23, 2016.

The MS4 Permit requires that the City develop a Watershed Management Program (WMP) to implement the requirements of the MS4 Permit on a watershed scale that will include customized strategies, control measures, and best management practices (BMPs). WMPs shall be developed using the Los Angeles Regional Water Quality Control Board (RWQCB) Watershed Management Areas (WMAs). The City can elect to collaborate with other MS4 permittees on the development of an Enhanced Watershed Management Program (EWMP) that will evaluate the multiple benefits of regional projects and implement regional control measures and BMPs. The WMP or EWMP will include an evaluation of existing water quality conditions, identify water quality priorities within each WMA, select watershed control measures, and incorporate compliance schedules. The draft WMPs were required to be submitted to the Los Angeles RWQCB by June 28, 2015. Since January 2015, the following four WMPs have been approved and are currently being implemented: Long Beach Nearshore, Los Cerritos Channel Watershed, Lower Los Angeles River Watershed, and Lower San Gabriel River.[1]

Currently, the MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories must develop a Standard Urban Stormwater Mitigation Plan (SUSMP). Certain categories of development are considered "priority" because the Los Angeles RWQCB determined that they have the greatest potential to degrade water quality. The three categories of "priority" projects include the following: (1) 10 or more home subdivisions; (2) 100,000 sf or larger commercial developments; and (3) projects located adjacent to or directly discharging to environmentally sensitive areas. Because the project is a planning/policy action, future development projects facilitated by approval of the proposed project would be evaluated based on these three criteria.

City of Long Beach Municipal Code. According to Section 18.67.070 (Compliance with the WMP) of the City's Municipal Code, any demolition project of "any valuation" shall submit documentation that it has met diversion requirements. Specifically, the City requires 60 percent of the waste tonnage of construction or demolition debris to be recycled, reused, or diverted from landfills or disposal sites.

Chapter 18.76, Water Submeters, of the City's Municipal Code, establishes the City's intent to conserve water to ensure sufficient water resources are available to current and future City residents. Specifically, this chapter of the City's Municipal Code encourages water conservation in multi-family residential and mixed-use buildings by requiring the installation of water submeters at individual units to assist building owners in allocating water costs per unit, thereby incentivizing residents to conserve water.

[1] State of California Water Boards. 2018. Los Angeles Regional Water Quality Control Board, Storm Water-Municipal Permits (last updated September 17, 2018). Website: http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/ (accessed July 11, 2018).

Long Beach Water Department, Urban Water Management Plan. In accordance with the Urban Water Management Plan Act, the LBWD has prepared its *Long Beach Water 2015 Urban Water Management Plan* (2015 UWMP) (adopted in 2016), which anticipates that the LBWD's water supply will increase by 7 percent from 2015 to 2040 to meet projected water demands. Projected sources of water from 2015 to 2040 are anticipated to include a combination of groundwater obtained via annual extraction rights, imported water from MWD, and recycled water.

Long Beach Water Department, Board Resolution WD-1353. On June 2, 2016, the Long Beach Board of Water Commissioners declared a Stage 1 Water Supply Shortage. The adoption of the Stage 1 Supply Shortage means that one additional outdoor watering day is permitted during the hot and dry summer months compared to the previous Stage 2 Supply Shortage designation. Landscape watering in the City is allowed on Tuesdays, Thursdays, and Saturdays from April 1 through September 30. From October 1 through March 31, watering is allowed on Tuesdays and Saturdays due to cooler temperatures and increased rainfall.

City of Long Beach General Plan Conservation Element. Public utilities goals are included in the Conservation Element (adopted in 1973) of the City's General Plan. The following goals are applicable to the proposed project:

> **Water Resource Management Goal 1:** To assure adequate quantity and quality of water to meet the present and future domestic, agricultural, and industrial needs of the City.
>
> **Water Resource Management Goal 5:** To maintain, upgrade, and improve water systems and facilities serving Long Beach.

City of Long Beach General Plan Mobility Element. In October 2013, the City approved the General Plan Mobility Element. The Mobility Element seeks to guide development and improvements to the existing circulation system. Together with the existing circulation system, the Mobility Element considers the mobility of critical resources (e.g., water, energy, and communications). The following goals and policies related to utilities and services systems in the City's Mobility Element are applicable to the proposed project.

> **Strategy No. 19:** Promote well-maintained water, wastewater, and stormwater infrastructure systems that serve the demands of existing and future residents and businesses while mitigating environmental impacts.
>
> - **MOR Policy 19-1:** Plan for and provide appropriate levels and types of infrastructure based on the desired character of each neighborhood or district.
> - **MOR Policy 19-2:** Ensure that development is appropriate and in scale with current and planned infrastructure capabilities.

- **MOR Policy 19-3:** Promote water-efficient fixtures and appliances to reduce water demand.

- **MOR Policy 19-4:** Expand the use of water recycling and graywater systems to treat and recycle wastewater and to further reduce water demand related to irrigation of landscaped areas.

Sustainable City Action Plan. The City adopted the *Sustainable City Action Plan* on February 2, 2010, with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts to ensure the long-term health of the environment for the enjoyment and use of current and future generations. The Sustainable City Action Plan includes initiatives, goals, and actions that are meant to guide City decision-makers in striving to achieve a sustainable City. The following initiatives and actions are applicable to the proposed project.

Sustainability Goal 4: Facilitate the development of at least 2 megawatts of solar energy on City facilities by 2020.

Sustainability Goal 7: Facilitate the development of at least 8 megawatts of solar energy within the community (private rooftops) by 2020.

Green Economy and Lifestyle Initiative 1. Establish Long Beach as the leading California city for green business and green job growth.

Green Economy and Lifestyle Action 8. Implement a City green business program that incorporate goals and strategies for waste reduction, energy efficiency, water conservation, green purchasing, etc.

Green Economy and Lifestyle Initiative 2. Promote individual action that encourages active and green lifestyles, which supports a green economy.

Green Economy and Lifestyle Action 1. Update the City's green purchasing policy and the Sustainable Office Supply program to include additional requirements, green-only choices and automatic substitution to purchase materials with high postconsumer content that reduce quantity and toxicity of any generated waste.

Urban Nature Action 7. Incorporate sustainable principles and practices into golf course, marina, beach, park and playground/field design, and maintenance (grasscycling, reclaimed water irrigation, water conservation, recycling/waste management, and integrated pest management).

Urban Nature Initiative 2. Promote biodiversity citywide by encouraging the wide-scale use of native or edible landscapes.

Urban Nature Action 3. Ensure all open space and greening projects incorporate native/ drought tolerant plants and use low-water strategies.

Waste Reduction Initiative 1. Increase diversion by reducing waste and increasing recycling and reuse.

Waste Reduction Action 1. Implement the Multi-Family Recycling Ordinance and continue to structure waste hauler contracts to offer economic incentives for recycling and disincentives for excess waste.

Waste Reduction Action 2. Establish commercial recycling guidelines intended to increase the recycling rate of the commercial sector, keeping waste out of the waste stream.

Waste Reduction Action 3. Establish an Environmental Depot facility that will recycle electronic waste and dispose of hazardous waste.

Waste Reduction Action 4. Establish a publicly accessible compost/mulch facility in the City and create beneficial uses for City greenwaste within City limits (grasscycling, mulching, etc).

Waste Reduction Action 5. Develop commercial sector food-waste recovery programs and expand edible food redistribution programs.

Waste Reduction Action 6. Create comprehensive publicly accessible recycling infrastructure at all City facilities and locations and require businesses to have recycling pick-up and public recycling on site.

Waste Reduction Action 7. Encourage residential composting and expand the City's residential composting program.

Waste Reduction Action 8. Aggressively implement measures to decrease beach debris and expand beach recycling programs.

Waste Reduction Action 9. Investigate emerging conversion technologies as part of long-term waste management strategies.

Waste Reduction Action 10. Establish City purchasing guidelines that require the purchase of reusable and/or recycled products and require City operations to participate in take-back programs where available.

Waste Reduction Action 11. Implement an electronic record keeping/processing system for City operations to decrease the use of paper.

Waste Reduction Initiative 2. Increase awareness and promote the concepts of reduce, reuse, and recycle.

Waste Reduction Action 1. Create a public education campaign to reduce litter and waste by promoting the use of all types of reusable products instead of disposable products (reusable grocery bags, water bottles, etc.) and refusal of single-use items.

Waste Reduction Action 2. Continue public education efforts through continued support of Litter Free Long Beach and other educational programs that promote reduction of waste and litter.

Waste Reduction Action 3. Continue educating schoolchildren to recycle and reduce litter by continuing the Traveling Recycling Education Center (TREC) and Lunch with a Lizard programs.

Waste Reduction Action 4. Develop an environmental recycling awareness program to be implemented in targeted industries (hospitality, medical, restaurants, etc.).

Waste Reduction Action 5. Publicize and encourage free-cycling programs.

Waste Reduction Action 6. Promote sustainable landscaping practices and composting.

Waste Reduction Action 7. Encourage residential composting and expand the City's residential composting program.

Waste Reduction Action 8. Promote the use of post-consumer content products, thereby reducing demand for virgin materials.

Waste Reduction Action 9. Promote take-back programs that allow customers to return packaging or used products to manufacturer for proper disposal.

Waste Reduction Action 10. Promote the proper disposal of special wastes such as Household Hazardous Wastes and electronic waste.

Waste Reduction Initiative 3. Utilize recyclable materials as a raw materials source for industrial development to enhance the recycled-materials market in the City.

Waste Reduction Action 1. Continue existing operations of the Long Beach Recycling Market Development Zone[1] (RMDZ) to foster economic development and job opportunities.

Waste Reduction Action 2. Expand RMDZ boundaries.

Waste Reduction Action 3. Promote RMDZ products in the local marketplace.

Waste Reduction Action 4. Offer incentives such as free press for businesses that participate in the "Litter Free Zone" program.

[1] As defined in the City's *Sustainable City Action Plan*, Recycling Market Development Zones (RMDZ) are intended to assist sustainable companies that use recyclables as feedstock in manufacturing. The Long Beach RMDZ is combined with the City's Enterprise Zone, and the economic benefits that both programs offer are intended to assist in corporate development and expansion.

Waste Reduction Action 5. Encourage location of RMDZ businesses to the City by fast-tracking permits and licenses.

Waste Reduction Action 6. Promote community-based programs that provide jobs for disadvantaged individuals in RMDZ businesses.

Waste Reduction Action 7. Participate in e-waste recycling programs and support private e-waste programs and events.

Waste Reduction Action 8. Require City operations and encourage businesses and residents to buy recycled products to support the recycled products market.

Waste Reduction Action 9. Aggressively apply for grants and partner with others agencies to leverage funding to implement used oil and tire recycling programs and other litter programs.

Waste Reduction Action 10. Partner with the Conservation Corps and other local recycling businesses to further recycling and reuse.

Water Initiative 1. Ensure a sustainable water supply through conservation and reduced dependence on imported water.

Water Action 1. Make it illegal and socially unacceptable to waste water in the City.

Water Action 2. Reduce amount of water used for landscape irrigation by improving irrigation systems and by replacing grass lawns with landscapes that are more drought-tolerant, enhance the environment, require less maintenance, and reduce the amount and pollution load of urban runoff into the Long Beach coastal zone.

Water Action 3. Further reduce demand for potable water by converting industrial and irrigation demands to recycled water wherever practical and cost-effective.

Water Action 4. Continue research and development of cost-effective and environmentally responsible seawater desalination as an alternative, sustainable supply of potable water.

Water Action 5. Continue to improve management and yield of the groundwater basin that the City relies on for approximately 50 percent of its potable water.

Water Action 6. Update landscaping standards to require drought-tolerant and native landscaping to reduce water consumption.

Water Initiative 2. Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater.

Water Action 1. Aggressively pursue strategies to keep trash off our beaches and pollution out of our ocean.

Water Action 2. Continue to manage urban and stormwater runoff by installing emerging treatment technologies into the storm drain system.

Water Action 3. Continue to work with upstream cities in the Los Angeles River Watershed to implement stormwater best management practices (BMPs) in the watershed to reduce pollutant loadings.

Water Action 4. Pursue legislation and secure funding to mitigate surface water and ground water pollution.

Water Action 5. Participate in and promote beach, neighborhood and community, and business corridor cleanups in order to keep our watersheds and beaches clean.

Water Action 6. Encourage the use of development techniques to direct rooftop runoff to pervious areas such as yards, garden beds, vegetated/soft bottom open channels, or on-site structural BMPs for capture, treatment, and reuse.

Water Action 7. Design streets to direct rainwater runoff to landscaped areas.

Water Action 8. Utilize and/or replace non-pervious surfaces with permeable materials (e.g., sidewalks, driveways, outdoor patios, and parking lots).

Water Action 10. Update development standards to require low impact development strategies such as detention basins, infiltration basins, infiltration trenches, conservation of natural areas, permeable pavements, treatment wetlands, bioswales, curb cuts, green roofs, rain gardens, and other pre/post construction BMPs.

Water Action 11. Expand Stormwater Management Education and Outreach programs to watershed-based programs and develop public-private educational partnerships to promote behavioral change.

4.9.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on utilities providers if it would:

Threshold 4.9.1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;

Threshold 4.9.2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;

Threshold 4.9.3: 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;

Threshold 4.9.4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

Threshold 4.9.5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The proposed project is considered a policy/planning action and does not include any physical improvements. However, future new development facilitated by approval of the proposed LUE would be required to comply with all applicable federal, State, and local statutes and regulations related to solid waste. The CIWMB is the State agency tasked with overseeing, managing, and tracking solid waste generated in the State each year. The CIWMB promotes a sustainable environment, which encourages that resources are reused or recycled within local jurisdictions. In addition, the CIWMB promotes the use of technologies aimed at diverting solid waste from landfills. For example, the State passed the CIWM Act mandating that local jurisdictions achieve a 25 percent diversion rate by 1995 and a 50 percent diversion rate by 2000. Furthermore, Section 18.67.070, Compliance with the WMP, of the City's Municipal Code requires that all new projects requiring demolition recycle, reuse, or divert 60 percent of construction waste from landfills to disposal sites. All future developments facilitated by project approval would continue to be subject to the appropriate planning and permitting processes, thereby ensuring compliance with applicable waste laws and regulations. Therefore, impacts related to compliance with federal, State, and local statutes and regulations related to solid waste are not discussed further in this Recirculated Draft EIR (Threshold 4.9.5).

Refer to Section 4.10, Energy, for further discussion related to project-related impacts with respect to electric power and natural gas facilities(Threshold 4.9.1) , as well as a discussion of solar energy. The LUE policies identify investment in infrastructure systems, including green technology and renewable energy (LU-M-13), as well as maintaining adequate and sustainable infrastructure systems to protect the health and safety of all City residents, businesses, institutions, and regional-serving facilities (LU Policy 17-2). Solar infrastructure would be a part of the green technology, renewable energy, and infrastructure identified as necessary to promote green energy generation projects (LU Policy 2-1).

4.9.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures and would not include any project design features related to utilities and service systems. Although there are no compliance measures and project design features related to utilities, the LUE and UDE Goals, Strategies, and Policies are intended to reduce the impacts of future development envisioned under the proposed project.

4.9.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following proposed strategies and policies are applicable to the analysis of utilities and would replace existing goals, strategies, and policies outlined in the City's existing LUE and the Scenic Routes Element (SRE) (1975) following project approval:

Land Use Element.

LU Policy 1-3: Require sustainable design strategies to be integrated into public and private development projects.

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 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 2-1: Promote the establishment of local green energy generation projects along with the infrastructure to support such projects.

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 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-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.

Strategy No. 17: Improve public infrastructure to serve new development, established neighborhoods, commercial centers, and 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 City residents, businesses, institutions, and regional-serving facilities.

LU-M-65: 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-105: Verify the feasibility of using reclaimed water as a major source of the City's domestic water supply by 2020.

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.

Urban Design Element (2018).

Strategy No. 1: Improve function and connectivity within neighborhoods and districts.

UD Policy 1-2: Focus development and supporting infrastructure improvements within targeted Areas of Change identified within the Land Use Element.

Strategy No. 5: Integrate healthy living and sustainable design practices and opportunities throughout Long Beach.

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.

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.

UD Policy 6-1: Prioritize improvements to remedying infrastructure, public facilities, and service deficiencies to underserved neighborhoods and business hubs.

UD Policy 6-3: Maintain adequate and sustainable infrastructure systems to protect and enhance the health and safety of all City residents, businesses, institutions, and regional-serving facilities.

UD Policy 6-4: Promote sustainability through the use of new technologies and green infrastructure systems and equipment. Prioritize areas to retrofit with green infrastructure, Low Impact Development, and Stormwater BMPs.

UD Policy 31-7: Ensure that landscaping for new projects complies with Title 23, Chapter 2.7 of the California Code of Regulations, Model for Water Efficient Landscape Ordinance.

UD Policy 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, minimizing 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.

Strategy No. 39: Beautify the City with trees and landscaping while being conscious of water resources and utilizing sustainable practices.

UD Policy 39-4: Ensure that landscaping for new projects complies with Title 23, Chapter 2.7 of the California Code of Regulations, Model for Efficient Landscape Ordinance.

UD Policy 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.

UD Policy 39-7: Consider providing bioswales, pervious strips, flow-through planters, and pervious pavement to help infiltrate stormwater runoff before it enters the sewer system.

4.9.8 Project Impacts

Threshold 4.9.1: **Would the project require or result in the relocation or construction of new or expanded *water*, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

OR

Threshold 4.9.2: **Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?**

Less Than Significant Impact. The proposed project does not include physical improvements or development; however, project implementation would allow for the future construction of up to 28,524 units and approximately 13,542,617 sf of non-residential square footage within the planning area by 2040. Future development projects associated with project implementation would result in both short-term and long-term increases in water demand; however, the project-related increase in demand for water may not directly correlate with the project-related increase in housing units since the bulk of anticipated new units is needed to alleviate overcrowding of existing residences that are already using water. An increase in short-term demand for water is anticipated to occur during construction of future development while an increase in long-term demand for water is anticipated

to occur during operation of future development. As required for all new development in California, the proposed project would comply with California State law regarding water conservation measures, including pertinent provisions of Title 24 of the California Government Code (Title 24) regarding the use of water-efficient fixtures.

Construction. Short-term demand for water may occur during construction activities associated with future projects facilitated by approval of the proposed project. Water demand for soil watering (fugitive dust control), cleanup, masonry painting, and other activities would be temporary and would cease under the anticipated General Plan build out scenario (2040). Overall, demolition and construction activities require minimal water as compared to water demand associated with the anticipated General Plan build out scenario (2040). Therefore, construction activities are expected to result in less than significant impacts on the water system or available water supplies, and no mitigation would be required.

Operation. The 2015 UWMP projects future water demands separately for each land use sector. These projections account for distribution system losses and water conservation measures. Numerous policies and programs outlined in the 2015 UWMP and the General Plan Update would reduce water consumption and wastewater flow, which will decrease the overall burden on existing water facilities and decrease the number of facilities that would need to be constructed or expanded. As previously identified, the LBWD is implementing the following water conservation programs to reduce demand:

- Turf Replacement Program
- Water Rate Structure
- System Loss Program
- Public Education and Outreach

The water demand projections in the 2015 UWMP account for SCAG's 2012 RTP population, housing, and employment growth projections for year 2035, which are higher than the most current socioeconomic projections included in SCAG's Final 2016 RTP for year 2040 (refer to Table 3.B, Anticipated General Plan Build-Out Summary, in Chapter 3.0, Project Description, for socioeconomic projections). Because the 2015 UWMP water demand projections use the higher 2035 growth projections, project water demands by sector, as shown in Table 4.9.C, are conservative estimates since socioeconomic projections in SCAG's Final 2016 RTP are substantially lower. Because the proposed project accommodates growth consistent with SCAG's growth projections, project-related growth and its associated water demand have been accounted for in the 2040 scenario identified in the 2015 UWMP. Water demand projections for the City are shown in Table 4.9.C, below.

Table 4.9.C: Current and Projected Water Demand by Sector (in acre-feet)

Land Use Type	2015 Usage	2040 Anticipated Build Out
Single-Family Residential	17,778	20,363
Duplex	3,114	3,421
Multi-Family Residential	15,517	20,562
Irrigation	2,187	2,208
Commercial	14,359	16,374
Industrial	219	122
Fire Lines	4	3
Losses	2,028	2,882
Conservation	0	(6,830)
Total	**55,206**	**59,105**

Source: Long Beach Water Department (LBWD). 2016. *2015 Urban Water Management Plan*, Table 6: Water Demand by Sector.

As illustrated in Table 4.9.C, the anticipated General Plan build out scenario (2040) would result in a forecasted demand of approximately 59,105 af or an increase of approximately 3,900 af (7 percent) over 2015 usage. However, according to the City's total water usage in 2018, the project-related increase in demand for water would be approximately 286 af (0.5 percent) over 2018 usage.[1] As such, the anticipated increase in water demand by 2040 would represent less than one percent of the LBWD's total projected water supply for year 2040. Total water demand by 2040 (59,105 af) is expected to utilize approximately 75 percent of projected available water supply (total water supply by 2040 is estimated at 79,291 af [refer to Table 4.9.B]). In addition, the LBWD anticipates that water supplies will be sufficient to meet all demands through year 2040 during normal, single dry year, and multiple dry year hydrologic conditions. Therefore, the project-related increase in water demand would also be within the LBWD's anticipated water supply for its service area in year 2040.

UWMPs are essential documents by which cities and counties determine their water supplies consistent with General Plan updates. The accuracy and usefulness of UWMPs allow for cities and counties to determine water demand for a proposed development by determining whether or not the project was included as part of the projected water demand of the current UWMP, which accounts for growth projections outlined in a city or county's General Plan. Consequently, the water demand does not need to be separately evaluated as long as a project is consistent with the UWMP and General Plan. The LBWD's most current UWMP was adopted in 2015 and its existing service population was based on 2015 data from the California Department of Finance (DOF) and population projections included in the SCAG 2012 RTP/SCS.[2] As previously stated, SCAG's 2012 RTP/SCS includes population projections that are higher than population projections included in SCAG's Final 2016 RTP. As such, water demand projections in the UWMP are considered more

[1] As documented by the City, the total water usage in 2018 was 58,819 af. This data is not available by land use type and, therefore, was not included in Table 4.9.C.

[2] LBWD. 2016. *Long Beach Water 2015 Urban Water Management Plan*, Population and Demographics.

conservative because they use higher socioeconomic projections than those included in SCAG's Final 2016 RTP. Moreover, water demand projections in the UWMP are considered conservative because they do not account for the fact that new residential units are likely to use significantly less water as a result of building code requirements and reduced landscaping associated with proposed multi-family residential units, which account for the majority of new residential development under the proposed project. Because future development that may occur with implementation of the proposed project has been determined to be consistent with water demands in the 2015 UWMP and because the LBWD has identified a surplus water supply to serve the projected water demands through year 2040, the future project-related demand for water would be consistent with the City's UWMP.

While projected water demands associated with the anticipated General Plan build out scenario (2040) would be within the ability of the LBWD to serve the project, the LBWD plans to continue to replace aging water infrastructure in order to provide reliable water infrastructure into the future (Goal 7 of the proposed LUE). These improvements are accounted for in the City's *Fiscal Year 2019 Adopted Budget Capital Improvement Program*[1] and include, but are not limited to, water pipeline system improvements, water supply projects, and facility improvements. All improvements identified in the Capital Improvement Program that require a discretionary action would be required to go through the environmental review process to identify project-specific impacts. However, it is anticipated that environmental impacts associated with upgrades to water facilities would be minimal because most of the existing water lines are located within roadway rights-of-way that have previously been disturbed. Moreover, future development projects facilitated by the proposed project would be required to undergo the Site Plan Review process, during which the City would identify potable water systems serving a project and would assess Plumbing Permit and Plan Check Fees. Payments of these fees would fund future upgrades to water facilities within the planning area. Therefore, water infrastructure that is adequately sized to serve existing and future needs would be provided during the anticipated General Plan build out scenario (2040).

Although existing water supplies available to the LBWD provide sufficient quality and reliability, the LBWD continues to explore opportunities to augment its water supply. Examples include using the excess capacity at WRD's Advanced Water Treatment Facility to inject in the local groundwater basin; using unused effluent produced at the Long Beach WRP, transporting the effluent to a LBWD-owned and operated advanced water treatment facility that would produce high-quality water for injection into the local groundwater basin; partnering with other Central Basin pumpers to construct extraction wells in the Montebello Forebay Spreading Grounds, and delivering the extracted water to LBWD and the partners, to allow for more percolation; and constructing extraction wells within the West Coast Basin where LBWD has rights to 0.7 af/yr of water.

Additionally, under AB 610, a WSA would be required for any project if it is a residential development consisting of 500 units or more; a commercial or business development employing more than 1,000 persons or consisting of 500,000 sf or more of floor space; a commercial office

[1] City of Long Beach. Fiscal Year 2019 Adopted Budget-Capital Improvement Program Budget. Website: http://www.longbeach.gov/globalassets/pw/media-library/documents/resources/general/capital-improvement-plan/capital-improvement-plan/fy-19-adopted-cip-book (accessed January 21, 2019).

building employing more than 1,000 persons or consisting of more than 250,000 sf of floor space; or an industrial, manufacturing, or processing plant or industrial park planning to house more than 1,000 persons, occupying more than 40 acres, or having more than 650,000 sf of floor area. Individual projects occurring under the proposed project would be required to prepare a WSA if they meet any of the requirements under AB 610.

With the continued good practice within the City to reduce water demand in compliance with State and local ordinances aimed at water conservation, the proposed project would not result in the need for additional water infrastructure that would result in a significant impact. Therefore, implementation of the proposed project would not necessitate the construction or relocation of new water supply or conveyance facilities. Impacts would be less than significant, and no mitigation would be required.

Threshold 4.9.1: **Would the project require or result in the relocation or construction of new or expanded water, *wastewater* treatment, storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

OR

Threshold 4.9.3: **Would the project 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 commitment?**

Less Than Significant Impact. Although the nature of potential future projects is not known at this time, future development that is facilitated from approval of the proposed project would result in a connection to the existing sewer system that is ultimately routed to the JWPCP or the Long Beach WRP. The JWPCP treats approximately 300 mgd and has a total permitted design capacity of 400 mgd, whereas the Long Beach WRP has a total permitted capacity of 25 mgd and treats approximately 13 mgd of recycled water.[1]

Construction. Short-term demand for wastewater treatment services may occur during construction activities associated with future projects facilitated by approval of the proposed project. It is anticipated that sanitary services during construction of future projects would likely be provided by portable toilet facilities, which would transport waste off site for treatment and disposal. The demand for wastewater treatment services during construction would be temporary in nature and would be minimal water as compared to the demand for wastewater treatment services associated with the anticipated General Plan build out scenario (2040). Therefore, construction activities are expected to result in less than significant impacts on the wastewater treatment and collection system, and no mitigation would be required.

[1] LACSD. JWPCP Total Energy Facility. Website:http://www.lacsd.org/solidwaste/swpp/energyrecovery/digestergastoenergy/jwpcpwrptotalenergy.asp (accessed July 11, 2018).

Operation. The additional future development facilitated from implementation of the proposed project would place a higher demand on wastewater facilities. As illustrated by Table 4.9.D, the greatest increase in service demand would be in areas targeted for commercial, industrial, and public facilities/institutional uses. Table 4.9.D shows the projected wastewater demand associated with project implementation. According to the LACSD average wastewater generation factors,[1] the proposed project is anticipated to generate a total estimated wastewater flow of approximately 43 mgd, or an approximate 5.52 mgd increase over 2012 usage. This projection is anticipated to be conservative and representative of a "worst-case scenario" due to the fact that a bulk of projected new housing units through 2040 is anticipated to alleviate overcrowding of existing housing units in Long Beach with current Long Beach residents who are already generating wastewater within the City. Moreover, new units are likely to use significantly less water and thereby generate less wastewater due to building codes requiring reduced water consumption and reduced landscaping associated with proposed multi-family residential units, which account for the majority of new residential development under the proposed project. Therefore, these projections do not consider the large proportion of existing residents anticipated to be served by new housing units.

Table 4.9.D: Wastewater Demand – Current and Projected (gpd)

Land Use Type	Unit Type	Usage Factor	2012 Existing Units/ Square Footage	2040 Build-Out Units/ Square Footage	2012 Usage (gpd)	2040 Usage (gpd)	Project-Related Increase (gpd)
Single-Family Residential	gpd/unit	260	63,934 units	65,208 units	16,622,840	16,954,080	331,240
Multi-Family Residential	gpd/unit	156	99,860 units	127,110 units	15,578,160	19,829,160	4,251,000
Commercial/Retail	gpd/ksf	100	21,015,600 sf	22,691,099 sf	2,101,560	2,269,110	167,550
Office	gpd/ksf	200	7,984,400 sf	10,595,584 sf	1,596,880	2,119,117	522,237
Industrial	gpd/ksf	25	17,571,000 sf	25,987,327 sf	439,275	649,683	210,408
Public Facilities/ Institutional	gpd/ksf	50	21,474,000 sf	22,313,607 sf	1,073,700	1,115,680	41,980
Total	**-**	**-**	**-**	**-**	**37,412,415**	**42,936,830**	**5,524,415**

Source: Los Angeles County Sanitation District (LACSD). Table 1. Website: http://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=3531.
gpd = gallons per day
gpd/ksf = gallons per day per thousand square feet
gpd/unit = gallons per day per unit
sf = square feet

As previously stated, the LACSD facilities serving the City have a remaining capacity of 146.9 mgd. The anticipated project-related increase in wastewater from potential future development would represent approximately 4 percent of the remaining capacity of these facilities. As such, there is

[1] LACSD. Wastewater Loadings for Each Class of Land Use. Website: http://lacsd.org/civica/filebank/blobdload.asp?BlobID=3531 (accessed July 11, 2018).

sufficient wastewater treatment capacity within the LACSD facilities to accommodate the increase in wastewater demand citywide, and no major improvements are required. The projected future increase in wastewater flows associated with development that may occur with implementation of the proposed project would not exceed the treatment requirements of the RWQCB for the JWPCP and Long Beach WRP of the LACSD.

Future development projects facilitated by project approval would be reviewed by the City on a project-by-project basis and would be required to comply with any requirements in effect when the review is conducted, including sewer capacity considerations as part of the City development review and approval process. For example, projects would be required to pay Sewer Capacity Fees to fund the construction, reconstruction, maintenance, and operation of existing and future improvements to the sanitary sewer system, including improvements outlined in the City's 2019 Capital Improvement Program. Improvements and upgrades to sewer lines would continue to be prioritized based on need and would occur throughout the planning period associated with the proposed project (i.e., 2019 through 2040).

The proposed project would not substantially or incrementally exceed the current or future scheduled capacity of the JWPCP or the Long Beach WRP by generating flows greater than those anticipated. Furthermore, the City would require future project applicants to pay a Sewer Capacity Fee, which would further reduce potential impacts related to wastewater treatment. Therefore, project impacts related to wastewater treatment would be less than significant. In addition, project implementation would not necessitate the construction of wastewater supply or conveyance facilities. No mitigation would be required.

Threshold 4.9.1: **Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or *storm water drainage*, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

Less Than Significant Impact. The proposed project does not include any physical improvements, but would facilitate future development that would have the potential to create a need for new or expanded stormwater drainage facilities within the City.

Construction. Future development facilitated by the proposed project would be required to comply with the provisions of the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), or any other subsequent applicable permits. The NPDES program regulates stormwater and non-stormwater discharges associated with construction or demolition activities including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance equal to or greater than 1 acre. Future grading and construction activities would disturb soils and construction of structures that would increase impervious area, which can increase stormwater runoff during construction. However, the Construction General Permit requires preparation of a SWPPP to identify construction BMPs to be implemented during project construction in order to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, spills,

and increased runoff. Furthermore, as future individual projects are proposed, the City would review grading plans and construction documents to identify project features aimed at reducing construction impacts to storm drain facilities. Where necessary, the City would identify project conditions required to ensure the adequate capacity and operation of the storm drain system during construction activities. Therefore, construction activities associated with implementation of the proposed project would not require or result in the relocation or construction of new stormwater drainage systems, the construction of which would cause significant environmental impacts. Impacts would be less than significant level, and no mitigation would be required.

Operation. The development of future projects could increase impervious surface area, which would reduce infiltration. Future projects would be reviewed on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted, including payment of Development Fees to fund future improvements to the City's stormwater infrastructure. Such improvements are outlined in the City's 2019 Capital Improvement Program and include upgrades related to storm drain pipelines, pump stations, and stormwater monitoring equipment.

Depending on the size and nature of the projects, a Water Quality Management Plan (WQMP) would be developed on a project-specific basis to address post-construction urban runoff and stormwater pollution from new development and significant redevelopment projects. Detailed information about on-site hydrology, runoff flow rates, and pollutant loads are included in these project-specific analyses. The hydrological analyses included in the WQMPs prepared for future projects would identify BMPs and improvements to the existing storm drain system that would ensure that the City would be able to adequately handle increased stormwater runoff as a result of the proposed project.

The proposed project would have less than significant impacts related to hydrology and water quality because the proposed project is a planning/policy action and does not include the physical construction of any development that could impede or impair water quality and because future projects facilitated by project approval would be required to comply with applicable regulations pertaining to hydrology and water quality. In addition, most projects envisioned under the proposed LUE are infill development projects, replacement of existing parking lots, and low-intensity retail uses that are paved, impervious, and currently lack best management practices (BMPs) for drainage and filtration. Infill and redevelopment projects envisioned under the proposed LUE have the potential to improve water quality and on-site stormwater treatment through the implementation of stormwater treatment BMPs and design features. Moreover, future projects would also be required to comply with goals and policies outlined in the proposed LUE that are aimed at reducing stormwater runoff and mitigating off-site impacts related to pollutants entering natural water bodies (refer to Section 4.9.7, Compliance Measures and Project Design Features, for a list of applicable goals, policies, and strategies). Therefore, the proposed project would result in less than significant impacts related to the construction or expansion of stormwater drainage facilities, and no mitigation would be required.

Threshold 4.9.1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or *telecommunications facilities*, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project does not include any physical improvements, but would facilitate future development that would have the potential to create a need for new or expanded telecommunications facilities within the City.

Construction. Construction activities associated with future projects facilitated by approval of the proposed project would not increase the demand for telecommunications facilities. As such, construction activities would not require or result in the construction of new or the relocation of existing telecommunication facilities. Construction of the proposed project would not result in impacts to telecommunications facilities, and no mitigation would be required.

Operation. Future development facilitated by the proposed project could result in the need for new or relocated telecommunications facilities. Similar to existing market conditions, Spectrum Communications, Frontier Communications, and AT&T U-Verse would extend existing services to meet the increased demand for telephone, internet, and cable services as future developments are proposed. Where necessary, infrastructure improvements would be made to existing telecommunications facilities in order to meet customer demands and achieve compliance with the City's goal of investing in telecommunications infrastructure systems (LU-M-13). Most telecommunications facilities in the City are currently located within existing right-of-way areas and/or are located underground. As such, environmental impacts associated with future improvements to telecommunications facilities are anticipated to be minimal, as these facility areas would have previously been disturbed through association with past infrastructure improvements. Furthermore, future telecommunications infrastructure improvements may be subject to further environmental review depending on the extent and nature of those improvements. Therefore, implementation of the proposed project would result in less than significant impacts related to the construction or relocation of existing telecommunications facilities, and no mitigation would be required.

Threshold 4.9.4: Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact. The proposed project does not include any physical improvements, but would facilitate future development that could result in an increased demand for solid waste collection and disposal services. As noted in Section 4.6, Population and Housing, implementation of the proposed project could result in the development of up to an additional 28,524 dwelling units and the addition of 18,230 persons.

Construction. Construction of some future projects facilitated by the proposed project may generate demolition waste; however, such debris would be accommodated by the County's existing landfills, with a large majority of the City's solid waste being disposed of at the SERRF. In addition, at least 60

percent of construction waste would be recycled pursuant to Chapter 18.67, Construction and Demolition Recycling Program, of the City's Municipal Code. Under the Municipal Code, covered projects requiring demolition or building permits issued on or after January 1, 2017, are required to divert at least 60 percent of all project-related construction and demolition material from landfills. Compliance with this chapter of the Municipal Code would be a condition of approval on any construction or demolition permit issued for a covered project. Therefore, the proposed project would have a less than significant impact related to solid waste generation during construction, and no mitigation measures regarding construction debris are required.

Operation. The City's Environmental Services Bureau provides solid waste collection services to collect and dispose of the solid waste/refuse generated by the City. Solid waste generated in the City is also transported to LACSD facilities when solid waste is considered unproccessable at the SERRF. Solid waste generated by operations associated with future development facilitated by the proposed project would be collected by the City's Environmental Services Bureau and hauled to the SERRF, which currently processes an average of 1,290 tons per day (tpd) (2,580,000 pounds) of municipal solid waste,[1] with a maximum capacity of 2,240 tpd (4,480,000 pounds).[2] Therefore, the SERRF is currently operating at approximately 58 percent of its daily design capacity.[3]

As described previously, it was determined that approximately 302,541 tons per year (605,082,000 pounds) of solid waste were disposed of in the City in 2017. Solid waste demand projections are shown in Table 4.9.E, below. As shown in this table, with the proposed project, the City is forecasted to generate approximately 1.62 million pounds per day (lbs/day) of solid waste in 2040, or an increase of approximately 193,744 lbs/day.

As shown previously in Table 4.9.A, the solid waste facilities that are accepting the remaining solid waste generated from the City that is not treated at the SERRF have a combined remaining capacity of approximately 211.5 million cubic yards and closure dates as late of 2045. Therefore, there is sufficient landfill capacity in the region to serve solid waste generated by future projects facilitated by the proposed project. Furthermore, future development would also include efficient waste management procedures to reduce the amount of solid waste generated in the planning area.

Therefore, impacts related to solid waste generation are considered less than significant, and no mitigation would be required.

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1 LACSD. Southeast Resource Recovery Facility (SERRF) Brochure. Website. http://www.lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp (accessed July 11, 2018).

2 CalRecycle. Facility/Site Summary Details: Southeast Resource Recovery Facility (19-AK-0083). Website. http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AK-0083/Detail/ (accessed July 27, 2018).

3 781 tons per day/2,240 tons per day = 0.348 (35 percent).

Table 4.9.E: Solid Waste Demand – Current and Projected (lbs/day)

Land Use Type	Unit Type	Usage Factor	2012 Existing Units/ Square Footage	2040 Build-Out Units/ Square Footage	2012 Usage (lbs/day)	2040 Usage (lbs/day)	Project-Related Increase (lbs/day)
Single-Family[1]	lbs/unit/day	10	63,934 units	65,208 units	639,340	652,080	12,740
Multi-Family[2]	lbs/unit/day	4	99,860 units	127,110 units	399,440	508,440	109,000
Commercial / Retail[3]	lbs/1,000 sf/day	5	21,015,600 sf	22,691,099 sf	105,078	113,455	8,377
Office[4]	lbs/1,000 sf/day	6	7,984,400 sf	10,595,584 sf	47,906	63,574	15,668
Industrial[5]	lbs/1,000 sf/day	5	17,571,000 sf	25,987,327 sf	87,855	129,937	42,082
Public Facilities/ Institutional[6]	lbs/sf/day	0.007	21,474,000 sf	22,313,607 sf	150,318	156,195	5,877
Total	**-**	**-**	**-**	**-**	**1,429,937**	**1,623,681**	**193,744**

Source: California Department of Resources Recycling and Recovery (CalRecycle). Estimated Solid Waste Generation and Disposal Rates (accessed July 27, 2018).

1 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
2 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
3 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
4 Stevenson Ranch Draft EIR (Phase IV) , Los Angeles County (April 1992)
5 Stevenson Ranch Draft EIR (Phase IV) , Los Angeles County (April 1992)
6 Draft EIR for the Central Commercial Redevelopment Project (Monterey Park Redevelopment Agency) (1992)

EIR = Environmental Impact Report
lbs/day = pounds per day
lbs/1,000 sf/day = pounds per thousand square feet per day
lbs/sf/day = pounds per square feet per day
lbs/unit/day = pounds per unit per day
sf = square feet

4.9.9 Mitigation Measures

The proposed project would not result in any significant adverse impacts related to utilities, and no mitigation measures are required.

4.9.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for utilities. The planning area includes the entire 50 square miles within the limits of the City of Long Beach; the cumulative area for utilities is listed below for each individual utility provider. The cumulative timeframe for the anticipated General Plan build out scenario is 2040. Cumulative projects in the service area for each utility provider would cause significant impacts if they cause an exceedance of wastewater treatment requirements of the Los Angeles RWQCB with jurisdiction in Long Beach and Los Angeles County, generate wastewater in exceedance of the combined capacities of wastewater treatment plants that serve the planning area, create the need for additional water supplies, or generate solid waste in exceedance of the combined capacities of the landfills that serve the planning area and the County.

Wastewater. The geographic area for the cumulative analysis for wastewater treatment is defined as the City and the LACSD. Within its service area, LACSD uses United States Census Bureau population information for population projections, as well as existing land use and build out or

zoned land use to project current and future wastewater flows. The City is almost entirely built out, with most new development occurring as in-fill projects.

Cumulative projects would result in an increase in development that would require wastewater treatment services. Similar to the proposed project, an increase in wastewater treatment demand that is disproportionate to wastewater treatment capabilities would result in a violation of the Los Angeles RWQCB. However, compliance with applicable federal and State regulations along with specific jurisdictional ordinances, as well as further CEQA review for projects requiring discretionary approvals, would reduce cumulative impacts related to potential wastewater treatment violations to a less than significant level. Therefore, implementation of the proposed project, in combination with cumulative projects, would not result in a significant cumulative impact with regard to wastewater treatment.

Cumulative projects, such as those proposed under adjacent city and county General Plans or private projects, would result in an increase in development that would result in an increased demand for water and wastewater treatment services. An increase in the demand for these services could result or require the construction of new treatment facilities or the expansion of existing facilities, the construction of which could result in significant environmental effects. Future treatment projects requiring discretionary approvals would be required to conduct environmental review under CEQA, which would require that significant environmental effects be mitigated to a less than significant level to the extent feasible. In addition, the cumulative projects would be required to comply with federal and State regulations, as well as local ordinances, aimed at reducing potential significant effects. Therefore, the proposed project's contribution to wastewater generation in the LACSD service area would not be cumulatively considerable, and no mitigation is required.

Water. The geographic area for the cumulative analysis of water infrastructure includes the service territory of the LBWD. According to the City's 2015 UWMP, the MWD's future water supplies are reliable because the MWD current allocation plan guarantees an amount of water close to the LBWD's need for water, and because the LBWD has a preferential right to the MWD supplies in excess of its need for that water. In addition, LBWD, which provides the groundwater supply to the City, projects that there are sufficient groundwater supplies to meet any future demand requirements in the City. Further, the current 2015 UWMP accounts for the proposed project's transition from traditional land uses to PlaceTypes and has demonstrated that the LBWD has the ability to serve the project-related increase in water demand through year 2040.

While the MWD would accommodate the project-related demand for water, the Southern California region is currently facing a challenge in securing its firm water supplies. Due to increased environmental regulations and competition for water from outside of the region, Southern California has seen a reduced supply of imported water. Furthermore, continued population and economic growth has resulted in increased water demands, which have affected water delivery reliability and water availability.

MWD's 2015 Regional UWMP describes water availability and identifies future water supplies to meet the region's long-term water demand. The MWD 2015 Regional UWMP also identifies supply

capacities from 2020 through 2040 under single dry-year, multiple dry-year, and average year hydrologic conditions. The MWD 2015 Regional UWMP indicates that the region can provide reliable water supplies under both normal conditions and under the single-driest-year and multiple-dry-year scenarios. While the MWD 2015 Regional UWMP has identified long-term water supplies to serve the region, the MWD has prepared for the possibility of being unable to meet the water demands of its member agencies. The MWD has established the Water Supply Allocation Plan (WSAP), which calculates each member agency's supply allocations and key implementation elements required for administering the allocation. The WSAP also considers how the MWD would be able to provide water to its member agencies during a catastrophic interruption in water supply. Therefore, impacts related to water demand are addressed in these water usage planning documents and would be less than cumulatively significant; therefore, no mitigation is required.

Solid Waste. The geographic area for the cumulative analysis of impacts to solid waste disposal capacity is the County of Los Angeles. Development associated with the proposed project and other past, present, and reasonably foreseeable projects within the County would contribute to an increase in demand for landfill capacity and solid waste services for the County. As stated previously, the SERRF, a refuse-to-energy transformation facility, serves the planning area and does not have a scheduled closure date. Remaining capacity and estimated closure dates for the SERRF are not determined because the facility is a transformation facility that converts solid waste to energy and ash. The SERRF currently does not exceed its daily maximum permitted disposal capacity. Solid waste considered unprocessable by SERRF would be taken to landfills in Orange, San Bernardino, Riverside, and Imperial Counties. There is currently sufficient permitted capacity within the LACSD system serving Los Angeles County to provide adequate future capacity for the County's solid waste needs.

In addition, all projects, including those proposed under this project, would be required to comply with all federal, State, and local statutes and regulations related to solid waste. Therefore, the proposed project would not have a cumulatively significant impact on waste disposal capacity at LACSD facilities, and no mitigation would be required.

Telecommunications. The geographic area for cumulative analysis of cable, telephone, and internet services is defined as the service territory for Spectrum Communications, Frontier Communications, and AT&T U-Verse. These services are not operating above capacity; however, these service providers are anticipated to extend current facilities to meet project service demands on an as-needed basis, as is the case under existing market conditions. Therefore, the proposed project's impacts related to cable, telephone, and internet services would not be cumulatively significant.

4.9.11 Level of Significance after Mitigation

There would be no significant and unavoidable adverse impacts related to utilities. No mitigation is required.

4.10 ENERGY

4.10.1 Introduction

Appendix F, Energy Conservation, of the *State of California Environmental Quality Act (CEQA) Guidelines* requires that Environmental Impact Reports (EIRs) include a discussion of potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F establishes a goal of decreasing reliance on fossil fuels. It requires an EIR to include a discussion of the potential energy impacts of proposed projects.

Consistent with requirements outlined in Appendix F of the *State CEQA Guidelines*, the analysis and discussion in this section provides information pertaining to the effects of the proposed project and its associated impacts on existing energy supplies and energy use patterns in the region and locality.

The information in this section is based largely on data and reports produced by the California Energy Commission (CEC), the South Coast Air Quality Management District (SCAQMD), and the Energy Information Administration (EIA) of the U.S. Department of Energy (DOE).

4.10.2 CEQA Baseline

Although the Notice of Preparation (NOP) was published on May 2015, the baseline year when analyzing energy impacts in this Recirculated Draft EIR is 2018.[1] This represents a departure from the 2016 Draft EIR, which used a baseline year of 2012 to evaluate project-related impacts. This Recirculated Draft EIR also differs from the energy analysis in the 2016 Draft EIR in that the previous analysis used the electricity and natural gas usage factors from SCAQMD's *CEQA Air Quality Handbook* (1993, currently being revised), whereas the current analysis uses the latest data from the California Emission Estimator Model (CalEEMod) model version 2016.3.2. The use of CalEEMod to determine baseline and projected energy impacts is considered to be a more accurate representation of project-related impacts, as CalEEMod incorporates 2008 energy efficiency standards into its model. It should be noted that CalEEMod model version 2016.3.2 is not yet updated with the 2016 California Green Building Standards Code (CALGreen Code) that became effective January 1, 2017.

4.10.3 Methodology

The discussion focuses on current levels of service provided to the planning area and information on possible constraints or impacts to those services associated with the anticipated General Plan build out scenario (2040).

To measure energy use within the planning area, demands for electricity and natural gas were obtained from the SCAQMD-approved CalEEMod model version 2016.3.2. The electricity and natural gas usage factors were modeled by land use type to the equivalent of one acre (e.g., 3 single-family

[1] While 2018 is the baseline when comparing existing energy usage to energy usage estimated in the anticipated General Plan build out scenario (2040), 2016 and 2017 data are used to describe the existing setting for energy, as these are the most current data for which background energy information is available.

dwelling units per acre, 16 low-rise apartment units per acre, and 38 midrise apartment units per acre), and were calculated as in 1,000 British thermal units per acre (kBtu/acre) for the existing baseline year of 2018 and the anticipated General Plan build out scenario (horizon year 2040).

CEQA requires an analysis of energy consumption because of environmental impacts associated with its production and usage. Such impacts include the depletion of non-renewable resources (e.g., oil, natural gas, and coal) and emissions of pollutants during both the production and consumption of energy use.

Energy usage is typically analyzed and expressed using the British thermal unit (Btu).[1] For example, the approximate amount of energy contained in one gallon of gasoline, one cubic foot of natural gas, and one-kilowatt hour (kWh) of electricity is 123,000 Btus, 1,000 Btus, and 3,400 Btus, respectively. Natural gas usage is typically analyzed and expressed in terms of therms. One therm is equal to approximately 100,000 Btus.

Electrical energy is expressed in units of kilowatts (kW) and kWh. A kWh is a measurement of energy. If energy is used at a constant rate over a period of time, then the total energy in kW hours would be equal to the power multiplied by the time in hours. For example, if a one kW hair dryer was run for one hour, the hair dryer would use one kWh of electrical energy. It should be noted that electrical energy is also often expressed in terms of megawatts (MW, or 1,000 kW) and gigawatts (GW, or 1,000,000 kW).

4.10.4 Existing Environmental Setting

According to the U.S. Department of Energy EIA, California has the second highest energy consumption in the nation. In 2016, the total energy usage for the State of California was 7,826 trillion Btus. Natural gas and motor vehicle gasoline accounted for the largest portion of the State's total energy demand at approximately 29 and 22 percent, respectively.[2]

In 2016, transportation uses consumed 3,112.4 trillion Btus (39.8 percent of the total demand), industrial uses consumed 1,852.1 trillion Btus (23.7 percent of the total demand), commercial uses consumed 1,477.2 trillion Btus (18.9 percent of the total demand), and residential uses consumed 1,384.4 trillion Btu (17.7 percent of the total demand).[3]

4.10.4.1 Electricity

In December 2018, California consumed an average of over 14,935 thousand megawatt-hours (MWh) of electricity. Natural gas is the main source of electricity in the State (approximately

[1] A "British thermal unit" is a traditional unit of measuring heat and is defined by the amount of heat that is needed to raise one pound of water a maximum density to one degree Fahrenheit.

[2] U.S. Department of Energy, Energy Information Administration (EIA). California. Website: https://www.eia.gov/state/?sid=CA#tabs-1 (accessed December 12, 2018).

[3] U.S. Department of Energy, EIA, California. Website: https://www.eia.gov/state/?sid=CA#tabs-2 (accessed April 16, 2019).

55 percent) followed by non-hydroelectric renewables[1] (25 percent), hydroelectric facilities (9.5 percent), nuclear facilities (10 percent), and coal-fired facilities (less than 1 percent).[2]

The City of Long Beach (City) receives its electricity from Southern California Edison (SCE). SCE, an independently owned utility, provides electrical service to 15 million people in 50,000 square miles across central, coastal, and southern California, including the City of Long Beach. SCE delivers electrical power to its service area through 12,635 miles of transmission lines, 91,375 miles of distribution lines, 1,433,336 electric poles, 720,800 distribution transformers, and 2,959 substation transformers.[3]

In 2017, SCE's primary source of energy was natural gas (34 percent of all energy provided). The second main source of SCE's energy was from non-hydroelectric renewable resources (29 percent). Other SCE energy sources include large hydroelectric (15 percent), nuclear (9 percent), coal (4 percent), and unspecified sources of power (9 percent).[4] SCE generates 16 percent of the energy provided at its own facilities.[5]

In February 2018, the CEC published preliminary California Energy Demands for 2018 through 2030 within the SCE Planning Area.[6] According to the CEC, the electricity consumption in the SCE service area for 2018 was 110,349 gigawatt hours (GWh) in the high-demand scenario. Forecasted electricity consumption within the SCE service area is estimated to be 125,112 GWh by 2025 and 133,754 GWh by 2030 (the furthest horizon year for which data are available). In addition, the CEC estimates that net peak demand and net energy load within SCE's service territory will continue to grow annually by 2.45 percent until 2030.

4.10.4.2 Natural Gas

As of 2017, California produced less than 1 percent of the total United States supply of natural gas.[7] Natural gas production includes onshore facilities located across the State, as well as offshore in the Pacific Ocean. In the State of California, electricity generation is the largest user of natural gas (nearly 45 percent), followed by industrial uses (25 percent), residential uses (e.g., space and water heating) (21 percent), and commercial uses (9 percent). Due to the decline in natural gas production

1 "Nonhydroelectric renewables" refer to energy sources such as wind, solar, biomass, and geothermal.

2 U.S. Department of Energy, EIA, California. Website: https://www.eia.gov/state/?sid=CA#tabs-4, (accessed April 16, 2019).

3 Southern California Edison (SCE). Powering Southern California for 130+ Years, Website: https://www.sce.com/ about-us/who-we-are (accessed December 19, 2018).

4 SCE 2017 Power Content Label, updated July 2018.

5 SCE Newsroom Fact Sheet, updated November 18, 2016.

6 California Energy Commission (CEC), 2018–2028 Electricity Demand Preliminary Forecast. Website: http://www.energy.ca.gov/2017_energypolicy/documents/2017-08-03_workshop/2017-07-06_pre_demand_forecst.php, (accessed July 30, 2018).

7 U.S. Department of Energy, EIA, California State Profile and Energy Estimates. Rankings: Natural Gas Marked Production 2017. Website: https://www.eia.gov/state/rankings/?sid=CA#/series/47 (accessed December 17, 2018).

in California, the State depends on out-of-state imports for nearly 90 percent of its natural gas supply.[1]

The City of Long Beach Municipal Energy Resources (ER) Department purchases natural gas from Southern California Gas Company (SoCalGas) and provides natural gas services to residents and businesses of Long Beach and Signal Hill and portions of surrounding communities, including the cities of Bellflower, Compton, Lakewood, Los Alamitos, Paramount, and Seal Beach. Currently, the ER Department is the fifth largest municipal gas utility in the nation, serving approximately 500,000 residents[2] and businesses through over 1,900 miles of ER pipelines.[3] The ER Department's customer profile is 53 percent residential and 47 percent commercial/industrial.

The ER Department receives a small portion (approximately 5 percent) of its natural gas supply directly into its pipeline system from local production fields in the planning areas, as well as offshore facilities. The remainder of ER's natural gas supplies is purchased from the southwestern United States. The ER Department also receives intrastate transmission service for purchased gas from SoCalGas.

In 2018, the California Gas and Electric Utilities[4] published the *2018 California Gas Report*. In addition to providing a summary of the existing and historic natural gas demands, the *2018 California Gas Report* provides projected annual gas supplies for future years through year 2035. According to the *2018 California Gas Report*, the natural gas demand in the ER Department's service area was estimated to be 8.65 billion cubic feet (bcf) per year in 2018 with a future annual demand projected to reach 9.02 bcf per year in 2035 (the furthest horizon year for which data are available).[5]

4.10.4.3 Gasoline

California crude oil production levels have been declining over the last 30 years; however, the State still accounts for 5 percent of the United States' crude oil production and petroleum refining capacity.[6] In 2017, approximately 143 billion gallons of gasoline were consumed in the United

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1 CEC. Supply and Demand of Natural Gas in California. Website: https://www. energy.ca.gov/almanac/naturalgasdata/overview.html (accessed December 17, 2018).

2 Long Beach Energy Resources Department. Website: http://www.longbeach.gov/energyresources// (accessed December 11, 2018).

3 California Gas and Electric Utilities. *2018 California Gas Report*. Website: https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf (accessed December 11, 2018).

4 Consists of the following: Southern California Gas Company, Pacific Gas & Electric Company, San Diego Gas & Electric Company, Southwest Gas Corporation, City of Long Beach Energy Resources Department, Sacramento Municipal Utilities District, and Southern California Edison Company.

5 California Gas and Electric Utilities. *2018 California Gas Report*. Website: https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf (accessed December 11, 2018).

6 U.S. Department of Energy, EIA. "California State Profile and Energy Estimates Profile Analysis." Website: https://www.eia.gov/state/analysis.php?sid=CA#40 (accessed February 13, 2019).

States[1] (setting an annual gasoline consumption record) and 15.5 billion gallons were consumed in California.[2]

The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.0 mpg in 2015.[3] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007. The Act, which originally mandated a national fuel economy standard of 35 mpg by year 2020, applies to cars and light trucks of Model Years 2011 through 2020.[4] In 2012, the federal government raised the fuel economy standard to 54.5 mpg for cars and light-duty trucks by Model Year 2025.[5]

According to the CEC Transportation Energy Demand Forecast 2018–2030, the demand for fuel is expected to decrease to between 12.3 billion and 12.7 billion gallons in 2030 (a 20–22 percent reduction). The reduction in gasoline demand through year 2030 (the furthest horizon year for which data are available) is based on assumptions related to new energy efficiency and regulations at the State and local levels and an increasing number of electric, hydrogen, diesel, and high fuel economy vehicles.[6]

4.10.5 Regulatory Setting

4.10.5.1 Federal Policies and Regulations

At the federal level, the United States Department of Transportation (DOT), the United States Department of Energy (DOE), the Federal Energy Regulatory Commission (FERC), and the United States Environmental Protection Agency (U.S. EPA) are the federal agencies with substantial influence over energy policies and programs. These agencies influence and regulate energy consumption through the establishment and enforcement of fuel economy standards for automobiles and light trucks, through energy-related research and development projects, and through transportation infrastructure improvements. In addition, these agencies regulate the interstate exchange of electricity, natural gas, and oil; and the licensing and permitting of hydroelectric projects; as well as oversee the environmental issues associated with electricity.

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1 U.S. Department of Energy, EIA. "Frequently Asked Questions". Website: https://www.eia. gov/tools/faqs/faq.php?id=23&t=10 (accessed March 19, 2019).

2 California Department of Tax and Fee Administration. 10-Year Report of Net Taxable Gasoline Gallons. Website: http://www.cdtfa.ca.gov/taxes-and-fees/MVF_10_Year_Report.pdf (accessed March 19, 2019).

3 U.S. Department of Transportation (DOT). "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: https://www.bts.gov/archive/publications/national_transportation_statistics/table_04_23/ (accessed March 19, 2019).

4 U.S. Department of Energy. "Energy Independence & Security Act of 2007." Website: https://www.afdc.energy.gov/laws/eisa (accessed March 19, 2019).

5 The White House. Office of the Press Secretary. "Obama Administration Finalizes Historic 54.5 MPG Fuel Efficiency Standards. Website: https://obamawhitehouse.archives.gov/the-press-office/2012/08/28/obama-administration-finalizes-historic-545-mpg-fuel-efficiency-standard (accessed March 19, 2019).

6 CEC. Transportation Energy Demand Forecast 2018-2030. Published on December 4, 2017.

National Energy Act. The National Energy Act of 1978 was a legislative response to the 1973 energy crisis. It includes the following statutes:

- **Public Utility Regulatory Policies Act (Public Law 95-617):** Passed by the U.S. Congress in 1978 to promote energy conservation and the greater use of domestic and renewable energy.

- **Energy Tax Act (Public Law 95-318):** Passed by the U.S. Congress in 1978 as a response to the 1973 oil crisis. The objective of this law was to shift from oil and gas reliance to energy conservation by promoting fuel efficiency and renewable energy through taxes and tax credits.

- **National Energy Conservation Policy Act (Public Law 95-619):** Passed by the U.S. Congress in 1978, this act was aimed at encouraging utilities to provide residential consumers with energy conservation audits and other services to encourage slower growth of electricity demand.

- **Powerplant and Industrial Fuel Use Act (Pub.L. 95–620).** Passed by the U.S. Congress in 1978 with the purpose of reducing the import of petroleum and increasing the nation's ability to use domestic energy sources. Specifically, this Act aimed to encourage the use of alternate fuels in lieu of natural gas and oil and the modernization of electric power plants, while reducing the vulnerability of the United States to energy supply interruptions.

- **Natural Gas Policy Act (Pub.L. 95–621).** Passed by the U.S. Congress in 1978, this law authorized the FERC to regulate both intrastate and interstate natural gas production and transmission. This Act had three main goals: (1) creating a single national natural gas market; (2) equalizing supply with demand; and (3) allowing market forces to establish the wellhead price of natural gas. Price controls put in place under this Act were intended to protect consumers from potential monopoly pricing.

Federal Energy Policy and Conservation Act. In 1975, the United States Congress adopted the Federal Energy Policy and Conservation Act as a means to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. The primary goals of this Act were to increase energy production and supply, reduce energy demand, provide energy-efficient alternatives, and grant additional authority to the Executive Branch to respond to changes in the nation's energy supply. In order to meet these goals, this Act established a reserve of petroleum, established energy conservation standards for consumer products, and established the first fuel economy standards for on-road motor vehicles. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. While compliance with federal fuel economy standards is not determined for each individual vehicle model, compliance is determined for each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the U.S. EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The U.S. EPA calculates a CAFE value for each manufacturer, based on fuel economy test results and vehicle sales. On the basis of the information from the CAFE program, the

U.S. DOT is authorized to assess penalties for non-compliance. Consequently, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

4.10.5.2 State Policies and Regulations

At the State level, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) are the two primary regulatory bodies that govern energy. The CPUC regulates privately owned electric, natural gas, and other public utilities. The CEC is the State's energy policy and planning agency. Among other duties, the CEC has regulatory authority over the construction or expansion of power-generating facilities, as well as authority to regulate energy resources in terms of supply, demand, and consumption.

Renewables Portfolio Standard Program. California established its Renewables Portfolio Standard (RPS) Program in 2002 under Senate Bill (SB) 1078, which was accelerated in 2006 under SB 107. The RPS required 20 percent of electricity sales to be served by renewable energy sources by 2010. In 2008, Executive Order S-14-08 was signed into law requiring retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020. In October 2015, SB 350 was enacted to codify California's climate and clean energy goals. SB 350 requires retail sellers of electricity and publicly owned utilities to procure 50 percent of their electricity from renewable sources by 2030.[1]

Title 24 of the California Code of Regulations. The California Energy Code (Title 24, Part 6 of the California Code of Regulations, California's Energy Efficiency Standards for Residential and Nonresidential Buildings), provides energy conservation standards for the new construction and rehabilitation of residential and non-residential buildings and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings provided these standards meet or exceed Title 24 Building Code requirements. Title 24 regulates building energy consumption for heating, cooling, ventilation, water heating, and lighting with regard to both electricity and natural gas. These standards are typically updated every 3 years by the CEC. The CALGreen Code (Title 24, Part 11) was most recently updated in 2016 to include new mandatory measures for residential as well as non-residential uses; the new measures became effective January 1, 2017. Compliance with Title 24 energy efficiency requirements can be achieved through following a prescriptive approach outlined in the standards or by following a performance approach using computer modeling. The prescriptive approach offers relatively little design flexibility but is easy to use, while the performance approach allows design flexibility that can be used to find the most cost-effective solutions but that requires multiple calculations.

Appendix F of the *State CEQA Guidelines*. Appendix F, Energy Conservation, requires that EIRs include a discussion of the potential energy impacts of a proposed project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (refer to Public Resources Code 21100[b][3]). In addition, Appendix F seeks inclusion of information in the EIR addressing the following:

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[1] CEC. Renewable Portfolio Standard. Website: https://www.energy.ca.gov/ portfolio/ (accessed March 19, 2019).

- Measures to reduce wasteful, inefficient, and unnecessary consumption of energy during construction, operation, and maintenance of the project;
- The siting and orientation of buildings and structures to minimize energy consumption, including transportation energy;
- Measures for reducing peak energy demand;
- Incorporation of alternative fuels (particularly renewable ones) or energy systems; and
- Incorporation of recycling for non-renewable resources.

Appendix F of the *State CEQA Guidelines* is an advisory document that assists Lead Agencies in determining whether a project would result in impacts related to energy.

4.10.5.3 Local Policies and Regulations.

Sustainable City Action Plan. The City adopted the *Sustainable City Action Plan* on February 2, 2010, with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts to ensure the long-term health of the environment for the enjoyment and use of current and future generations. The *Sustainable City Action Plan* includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City. The following goals, initiatives, and actions are applicable to the proposed project:[1]

Sustainability Goal 2: Reduce electricity use in City operations by 25% by 2020.

Sustainability Goal 3: Reduce natural gas use in City operations by 15% by 2020.

Sustainability Goal 4: Facilitate the development of at least 2 megawatts of solar energy on City facilities by 2020.

Sustainability Goal 5: Reduce community electricity use by 15% by 2020.

Sustainability Goal 6: Reduce community natural gas use by 10% by 2020.

Sustainability Goal 7: Facilitate the development of at least 8 megawatts of solar energy within the community (private rooftops) by 2020.

Energy Initiative 2: Ensure all of the City of Long Beach's operational needs are met through energy efficiency, conservation, and renewable energy sources.

Energy Initiative 3: Reduce electricity and natural gas consumption of the Long Beach community.

[1] City of Long Beach. Office of Sustainability. 2010. *Sustainable City Action Plan.* Adopted February 2, 2010.

Action 1: Increase energy efficiency in City facilities through ongoing energy audits, retrofits, weatherization, and preventative maintenance.

Action 4: Encourage the use of energy-efficient products including efficient lighting, energy monitoring systems, cool and green roofs, insulation, and efficient HVAC systems.

Action 9: Implement energy efficiency and conservation measures.

Climate Action and Adaption Plan. The City is currently in the process of preparing a Climate Action and Adaptation Plan (CAAP). The goal of the CAAP is to reduce future greenhouse gas (GHG) emissions and to prepare the City for the impacts of climate change, specifically rising sea levels, extreme heat, and poor air quality. The CAAP would provide a framework for creating and updating policies, programs, and practices to reduce the City's GHG footprint, and would incentivize the residents and businesses for their compliance. Through the City Inventory Reporting and Information System (CIRIS), the City will have a framework for calculating and reporting GHG emissions, and forecasting projected emissions based on anticipated growth. The CAAP would also include an analysis of existing sustainability and climate mitigation efforts, and develop strategies to reduce future emissions and impacts. Eventually, the CAAP would produce a plan to monitor the performance of the mitigation strategies.

4.10.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on energy providers if it would:

Threshold 4.10.1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation, or

Threshold 4.10.2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.10.7 Compliance Measures and Project Design Features

Because the proposed project is a programmatic planning action and does not include any project design plans or construction, it would not be required to adhere to any compliance measures and would not include any project design features related to energy. It should be noted that much of the existing development in the City was built before the 2016 Building Energy Efficiency Standards were adopted. New development occurring under the anticipated General Plan build out scenario would be required to be developed in accordance with the latest Building Energy Efficiency Standards in effect at the time of building permit issuance. Currently, the California's Building Energy Efficiency Standards are updated every three years. The updates are designed to improve the energy efficiency of regulated newly constructed residential and nonresidential buildings, building additions, and building alterations.

Although there are no compliance measures and project design features related to energy, the applicable Land Use Element (LUE) and Urban Design Element (UDE) Goals, Strategies, and Policies are intended to reduce the impacts of future development envisioned and facilitated by the proposed project. Additionally, the CAAP will serve as a mitigation measure of the LUE and will include a multitude of policies and programs to further reduce energy consumption, increase the use of renewable energy, and increase energy conservation to, at minimum, meet the State GHG targets for GHG reduction.

4.10.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following proposed LUE and UDE goals, strategies, and policies are applicable to the analysis of energy and would replace existing goals, strategies, and policies outlined in the City's existing LUE following project approval:

Land Use Element.

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-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 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.

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 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 4-1: Provide a Land Use Plan that allows a place for green energy development and green businesses.

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 7-6: Promote transit-oriented development around passenger rail stations and along major transit corridors.

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 7-11: 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 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 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.

Urban Design Element.

Policy UD 1-3: Promote the adaptive reuse and appropriate infill of resources within the existing urban fabric.

Policy UD 4-2: Support the goals and programs of the *Sustainable City Action Plan* (see the Conservation chapter and appendix) to promote, educate, and provide leadership on sustainable planning and development.

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 5-10: Support infrastructure improvements that attract light industrial and clean manufacturing uses, green technology uses, clean energy-related businesses, research, and development.

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.

Policy UD 8-6: Develop building types and forms with reduced servicing costs and reduced environmental footprints.

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 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 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 and vacant parcels).

4.10.8 Project Impacts

Threshold 4.10.1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact.

Electricity. Anticipated build out of the proposed project (2040) would allow for the construction of 28,524 housing units and 13,524,617 square feet of non-residential square footage, resulting in an increased demand for energy services. Energy would be consumed throughout construction and operation associated with future projects facilitated by project approval, in addition to energy consumed by existing development in the planning area. Specifically, energy would be required during construction for the transportation of building materials, manufacturing of building materials, and the actual construction of buildings and infrastructure improvements. Energy consumption during operation would be associated with building heating and cooling, use of consumer products, lighting, and vehicular traffic (including charging of Electric Vehicles [EVs] [1]).

Table 4.10.A, Citywide Forecasted Energy Demands, illustrates the total estimated electricity demand under existing conditions and compares this estimate to the projected electricity demand in 2040 following implementation of the proposed project. As illustrated in Table 4.10.A, the City consumed approximately 1,664,303,700 kWh of electricity in 2018 (968,449,622 kWh for residential uses [58 percent] and 695,854,078 kWh for non-residential uses [42 percent]). Following implementation of the proposed project, the projected electricity demand in the City would be 1,950,216,130 kWh in the General Plan horizon year of 2040 with anticipated buildout. As such, the project-related increase in electricity demand would be approximately 17.18 percent greater than the existing electricity demand. This analysis also assumes full build out under the anticipated General Plan build out scenario (2040) based on population, housing, and employment projections. This projection is conservative because the bulk of projected new housing units through 2040 is intended to alleviate overcrowding of existing housing units in Long Beach with current Long Beach residents who are already using energy resources within the City. Moreover, new units are likely to use significantly less energy due to building codes requiring reduced energy consumption. Moreover, many of the land uses as proposed under the project would replace existing uses that already utilize electricity resources.

Table 4.10.A: Citywide Forecasted Energy Demands

Energy Type	Usage/Unit	Existing Conditions (2018)	General Plan Anticipated Build Out (2040)	Net Difference in Energy Usage	Percentage Change from 2018 to 2040
Electricity					
Residential	kWh/yr	968,449,622	1,099,974,647	131,525,025	13.58%
Non-Residential	kWh/yr	695,854,078	850,241,484	154,387,406	22.19%
	Electricity Totals	1,664,303,700	1,950,216,130	285,912,430	17.18%
Natural Gas					
Residential	kBtu/yr	3,318,119,302	3,779,245,087	461,125,785	13.90%
Non-Residential	kBtu/yr	678,167,256	869,915,643	191,748,387	28.27%
	Natural Gas Totals	3,996,286,558	4,649,160,730	652,874,172	16.34%

Source: Compiled by LSA using CalEEMod model version 2016.3.2 (March 2019).
kBtu/yr = kilo-British thermal units per year
kWh/yr = kilowatt hour per year

[1] Although EV charging stations were not factored in the CalEEMod energy demand, EMFAC2014, which is included in the CalEEMod model, assumed that by year 2025 approximately 15.7% of passenger car sales will be Electric Vehicle (EV) equivalent. Only a small percent of the EV equivalent vehicles (not the hybrids) would utilized the EV charging stations.

New facilities required to support the project-related demand for electricity would be constructed in accordance with the demand for the new service. Because developments that would be considered under the proposed project have not yet been designed or proposed, the specific electricity facilities that would need to be installed to serve such future developments are unknown at this time, as are the potential environmental impacts of such installations. Potential environmental impacts would be evaluated on a project-by-project basis. However, because the City is largely built out, it is not anticipated that major new facilities would be necessary to serve new development facilitated by the anticipated General Plan build out scenario (2040).

For the reasons stated above, the proposed project would result in less than significant environmental impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. No mitigation would be required.

Natural Gas. Future development occurring under the proposed project would also result in additional demand for natural gas. As illustrated in Table 4.10.A, Citywide Forecasted Energy Demands, the City used a total of 3,996,286,558 kBtu in 2018. Residential uses accounted for 83 percent of the total (3,318,119,302 kBtu), whereas non-residential uses comprised the remaining 17 percent (678,167,256 kBtu). Implementation of the proposed project would increase natural gas consumption from current conditions through 2040. As illustrated in Table 4.10.A, future growth occurring under the proposed project would generate a natural gas demand of 4,649,160,730 kBtu, or an approximately 16.34 percent increase in natural gas demand. This is considered a small increase over the life of the project. This analysis also assumes full build out under the anticipated General Plan build out scenario (2040), which is a worst-case analysis since it is unknown how much of the proposed residential and non-residential uses would actually be constructed. In addition, many of the land uses as proposed under the project would replace existing uses that already utilize natural gas resources.

Gas service will be added to the existing system operated and maintained by the ER Department, as necessary to meet the requirements of individual projects within the City. Because developments that would be considered under the proposed project have not yet been designed or proposed, the specific improvements to existing natural gas facilities that would need to be implemented to serve future developments are unknown at this time, as are the potential environmental impacts of such improvements. Potential environmental impacts would be evaluated on a project-by-project basis. However, because the City is largely built out, it is not anticipated that major improvements would be necessary to serve the City and new development facilitated by the project approval.

For the reasons stated above, the proposed project would result in less than significant environmental impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. No mitigation would be required.

Gasoline. In addition to increasing the demand for electricity and natural gas, the project would result in energy usage associated with gasoline to fuel project-related trips (i.e., the use of motor vehicles). When evaluating a long-range planning project with an implementation horizon of 21 years, forecasting future travel methods and gasoline use is too speculative and not appropriate or feasible. Rather, the more appropriate measure of estimating energy use is to consider the distance traveled by vehicles associated with the proposed project. Therefore, this analysis is centered on the

overall VMT associated with the new development allowed by the proposed project and its associated transportation energy use.

As discussed further in Section 4.8, Transportation, citywide peak period VMT would decrease by 8 percent from 4,635,625 to 4,276,489 and citywide off-peak period VMT would decrease by 2 percent from 4,846,627 to 4,471,838 in 2040. Further, VMT per capita would decrease by approximately 9 percent from 19.9 in 2018 to 18.2 in 2040, and VMT per household would decrease by 19 percent from 56.9 in 2018 to 46.1 in 2040[1]. The decrease in VMT per capita and per household would likely result in an associated decrease in the demand for gasoline. Moreover, the fuel efficiency of vehicles is expected to continue to increase and improve throughout the life of the project as new fuel economy standards are established.

In addition, the proposed project aims to promote mixed-use development and encourage alternative modes of transportation to reduce vehicle trip lengths and reliance on the automobile, which in turn, would reduce the transportation energy demand in the planning area. The proposed project also encourages development of housing near employment and transportation centers (e.g., establishment of the Transit-Oriented Development PlaceType), which would lead to a potential decrease in VMT. The proposed project would also promote land use patterns that would improve walking and bicycling facilities to be more prominent, comfortable, and safe throughout the City. In addition, the project would require electric vehicle charging stations in new development projects (LU Policy 1-4) that would also serve to reduce the overall transportation energy demand. Finally, through requirements for installing and building new construction ready for EV chargers, the project will encourage a shift from use of gasoline to electricity use.

Therefore, implementation of the proposed project would not result in a substantial increase in transportation-related energy uses, such that it would result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Summary. The projected energy demands (i.e., electricity and natural gas) associated with the proposed project include the State's 50 percent increase in energy efficiency RPS for new residences and buildings and also accounts for Title 24 building energy efficiency as a result of changes to the CALGreen Building Efficiency Standards (Title 24, Part 11) and the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6) (which became effective on January 1, 2017) for new residences and buildings. In addition, the project includes a number of goals, policies, and strategies aimed at further reducing the energy demand in the City. These goals, policies, and strategies were not incorporated into the forecasted electricity demands. Therefore, the estimated electricity demand is a worst-case analysis. For example, due to the high number of sunny days which would provide an abundant supply of solar energy, the project would require new buildings constructed in the planning area to include solar panels, vegetated surfaces, high albedo surfaces, and/or similar roof features to reduce net energy usage

[1] 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. 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.

(LU Policy 1-6) and would also promote the establishment of local green energy generation projects (LU Policy 2-1). Sustainable City Plan Goals 4 and 7 would facilitate the development of at least 2 megawatts and 8 megawatts of solar energy, respectively, on City facilities and within the community (private rooftops) by 2020. Moreover, the project would require all new City leases and tenant improvements to follow Leadership in Energy and Environmental Design (LEED) or equivalent standards and would require energy efficiency standards to be part of all City lease/rental agreements (LU-M-9). The proposed LUE also includes several policies aimed at reducing VMT (LU Policy 1-10), which would serve to reduce the project's demand for gasoline. The proposed UDE would also require new projects to accommodate space for the use of rooftop solar panels and other forms of renewable energy (Policy UD 5-5) and would support infrastructure improvements that would attract clean energy-related businesses, research, and development (Policy UD 5-10). These policies will result in the generation of more solar energy, which will provide additional electrical supply to help power future operational demand, including EV charging stations. Implementation of applicable policies outlined in the proposed LUE, as well as compliance with the CAAP and the *Sustainable City Action Plan*, aimed at reducing energy usage, would ensure that new development envisioned under the project would be constructed and operated in a manner that would not use energy in a wasteful manner.

For the reasons stated above, the proposed project would result in less than significant environmental impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. No mitigation would be required.

Threshold 4.10.2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact. As previously stated, future projects facilitated by approval of the proposed project would be required to comply with the CALGreen Code (Title 24, Part 11) and the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6), which includes provisions related to insulation and design aimed at minimizing energy consumption. Future projects facilitated by project approval would also be required to comply with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at reducing energy consumption in the planning area.

As described further in Section 4.8, Transportation, VMT per capita would be reduced from 19.9 to 18.2, and VMT per household would be reduced from 56.9 to 46.1 under the anticipated General Plan build out scenario (2040) (a 9 percent and 19 percent decrease, respectively, from 2018 to 2040). Citywide peak period VMT and off-peak period VMT would also be reduced following implementation of the proposed project (8 percent and 2 percent, respectively, from 2018 to 2040). The overall reduction of VMTs associated with the project would likely result in a corresponding reduction in gasoline used for vehicles traveling to and from the site. Moreover, the reduction in overall VMTs would be consistent with the State's goal of reducing vehicular GHG emissions as outlined in SB 743.

In addition to complying with federal, State, and local standards regulating energy consumption, the project is also required to comply with Appendix F, Energy Conservation, of the *State CEQA Guidelines*. Specifically, Appendix F requires that EIRs include a discussion of potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Table 4.10.B includes a project-specific consistency analysis with applicable Appendix F considerations.

Table 4.10.B: Proposed Project Comparison to *State CEQA Guidelines* Appendix F

Appendix F Items for Consideration	Proposed Project
1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.	**Consistent.** Energy use during construction of future development facilitated by project approval would primarily involve gasoline and diesel fuel and would represent a short-term use of readily available resources. Potential construction impacts would be less than significant, and no mitigation is required. Operational energy demand includes natural gas and electricity. The anticipated General Plan build out scenario (2040), including new development proposed within the Areas of Change, would result in a 2040 natural gas demand of 4,649,160,730 kBtu (a 16.34 percent increase over existing conditions). Demand for electricity under the anticipated General Plan build out scenario (2040) would be 1,950,216,130 kWh (a 17.18 percent increase over existing conditions). Future development under the proposed project would be required to meet or exceed the provisions included in the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6) and the CALGreen Code (Title 24, Part 11). Additionally, because developments that would be considered under the proposed project have not been designed or proposed at this time, potential improvements to the current energy and natural gas facilities would be identified at the time such projects are considered. Therefore, with adherence to Title 24 regulations and the goals, policies, and strategies outlined in the proposed LUE and UDE, the proposed project is considered consistent with this threshold.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.	**Consistent.** The proposed project does not include physical improvements, but future development facilitated by the proposed project would be required to meet or exceed the provisions included in the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6) and the CALGreen Code (Title 24, Part 11) and would be required to comply with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at reducing energy consumption. The demand for energy supplies under the anticipated General Plan build out scenario (2040) would be greater than the current General Plan build out demand, but would remain within the forecasted demands for each utility (refer to Section 4.10.10, Cumulative Impacts, of this section for further information on the project's energy demands as compared to forecasted energy demands. In the event that new energy facilities are needed at a later date, such discretionary projects would be required to undergo a separate CEQA review process and their impacts would be assessed at that time. The proposed project is considered consistent with this threshold.

Table 4.10.B: Proposed Project Comparison to *State CEQA Guidelines* Appendix F

Appendix F Items for Consideration	Proposed Project
3. The effects of the project on peak and base period demands for electricity and other forms of energy.	**Consistent.** The proposed project's impact relative to peak and base demands for electricity and other forms of energy is discussed later in Section 4.10.10, Cumulative Impacts. Future projects would implement a variety of energy conservation measures that would be consistent with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at reducing energy consumption and would also be required to meet the California Energy Code Building Energy Efficiency Standards contained in Title 24 (Part 6). Additionally, because developments that would be considered under the proposed project have not been designed or proposed at this time, potential improvements to the current energy and natural gas facilities would be identified at the time such discretionary projects are proposed and under review. In the event that new energy facilities are needed, such projects would be required to undergo a separate CEQA review process and their impacts would be assessed at that time. Therefore, the proposed project is considered consistent with this threshold.
4. The degree to which the project complies with existing energy standards.	**Consistent.** Future development under the proposed project would be required to be consistent with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at reducing energy consumption and would also be required to meet or exceed the provisions included in the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6) and the CALGreen Code (Title 24, Part 11). For example, new projects facilitated by approval of the proposed project would be required to comply with the Building Energy Efficiency Standards for Residential and Non-Residential Buildings that are in place at the time new development is proposed. These standards are updated approximately every 3 years, with the next update (2019) to go into effect on January 1, 2020. Therefore, the proposed project is considered consistent with this threshold.
5. The effects of the project on energy resources.	**Consistent.** Future development under the proposed project would be required to be consistent with goals, policies, and strategies outlined in the proposed LUE and UDE that are aimed at reducing energy consumption and would also be required to meet or exceed the provisions included in the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6) and the CALGreen Code (Title 24, Part 11). Further, the energy demands of the proposed project would be included in the calculation of delivery capabilities and projected loads for SCE and the ER Department. The estimated amount of natural gas consumption for the anticipated General Plan build out scenario (2040) is approximately 4,649,160,730 kBtu, or an 16.34 percent overall increase in electricity demand. Electricity use is projected to be 1,950,216,130 kWh at General Plan build out, or a 17.18 percent overall increase in natural gas demand. The increased demand for natural gas and electricity does not account for energy efficiency standards, which would further reduce energy demands over the life of the project. Future improvements to existing electricity and natural gas facilities would be determined on a project-by-project basis. However, it is not anticipated that major new facilities would be necessary due to the minimal project-related increase in energy demand (less than 1 percent increase in electricity and natural

Table 4.10.B: Proposed Project Comparison to *State CEQA Guidelines* Appendix F

Appendix F Items for Consideration	Proposed Project
	gas demand through year 2040) to serve new development facilitated by the anticipated General Plan build out scenario (2040). Therefore, the proposed project is considered consistent with this threshold.
6. The project's anticipated transportation energy use requirements and its overall use of efficient transportation alternatives.	**Consistent.** The proposed project would be located in an urban area currently served by public transportation. Transit service is provided within the project vicinity by Metro and the Long Beach Transit. It is anticipated that the existing transit service in the project area would be able to accommodate the project-generated transit trips. The estimated traffic from the proposed project is addressed in Section 4.8, Transportation, in the Draft EIR and the *Traffic Impact Analysis* (TIA) (Appendix G). As described in the TIA, the proposed project would result in a 9 percent decrease in VMT per capita and a 19 percent decrease per household by 2040, which would serve to reduce the overall transportation energy usage in 2040 as compared to the without project scenario (the 2040 without project scenario would only result in a 1 percent decrease in VMT over existing conditions). In addition, new vehicles traveling within the planning area through 2040 would likely have improved fuel efficiency and would increasingly be comprised of electric, hydrogen, and diesel vehicles (consistent with historic and current trends). The project-related decrease in VMT can be attributed to the design of the proposed project, which aims to promote mixed-use new development near employment centers and transit-rich areas of the City and also encourages transit alternatives. For example, the proposed project concentrates new growth within the TOD PlaceType (along the Metro Blue Line in the City of Long Beach's Downtown) to encourage new residents to utilize public transit. The proposed project also encourages alternative transit options through the creation of bicycle and pedestrian paths to improve the bikeability and walkability in the planning area. Therefore, the proposed project is considered consistent with this threshold.

CEQA = California Environmental Quality Act
EIR = Environmental Impact Report
ER Department = Energy Resources Department
Metro = Los Angeles County Metropolitan Transportation Authority
SCE = Southern California Edison
TOD = Transit-Oriented Development
VMT = vehicle miles traveled

Future projects facilitated by project approval would be required to comply with federal, state, and local regulations aimed at reducing energy consumption. In addition, the proposed project includes several goals, policies, and strategies aimed at reducing energy consumption specifically within the planning area. These goals, policies, and strategies have been developed in accordance with federal and State energy regulations, such as the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6), the CALGreen Code (Title 24, Part 11), and SB 743, which are also aimed at reducing energy consumption. Therefore, the proposed project would be consistent with

applicable plans related to renewable energy and energy efficiency, and no mitigation would be required.

4.10.9 Mitigation Measures

There would be no significant adverse impacts of the proposed project related to energy, and no mitigation is required.

4.10.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for energy. The planning area includes the entire 50 square miles within the limits of the City of Long Beach; therefore, the cumulative area for energy providers is listed below for each individual public service provider.

4.10.10.1 Electricity

The geographic area for the cumulative analysis of impacts to the provision of electricity is the service territory of SCE.

Build out of the proposed General Plan LUE would result in an operational electricity demand of 1,950,216,130 kWh (1,950.22 GWh) (a 17.18 percent increase in demand over existing 2018 conditions). The SCE service territory is forecasted electricity demand of 133,754 GWh by 2030. Because no 2040 forecast was available, the 2030 high demand consumption forecast was extrapolated to the 2040 high demand consumption forecast using the annual growth percentage average under the peak demand scenario.[1] Using this calculation, the 2040 high demand consumption would be 155,227 GWh in 2040. The anticipated General Plan build out scenario (2040) would represent approximately 1.3 percent of the extrapolated 2040 peak demand. Therefore, it is anticipated that the electricity demand under the anticipated General Plan build out scenario (2040) would be within the forecasted electricity demand for 2040.

Although the proposed project has the potential to increase electrical demand in the area, SCE has identified adequate capacity to handle increase in electrical demand, and any increase in electrical demand resulting from the proposed project would be incremental compared to an increase in regional electrical demand. Compliance with Title 24 of the California Code of Regulations regulates energy consumption in new construction and regulates building energy consumption for heating, cooling, and lighting for future development under the proposed project. Future projects would also be required to comply with goals, policies, and strategies aimed at reducing energy demand within the planning area. Therefore, in relation to the cumulative study area, the proposed project's incremental contribution to increased demand for electricity would not be cumulatively considerable, and no mitigation is required.

[1] According to the California Energy Demand 2018–2030 Revised Forecast, SCE has historically experienced 1.5 percent annual growth in electricity demand under peak demand scenarios. In the absence of 2040 electricity projections, this historic growth rate has been applied to the 10-year period between the 2030 estimated electricity demand to estimate the peak electricity demand in 2040.

4.10.10.2 Natural Gas

The geographic area for the cumulative analysis of impacts to the provision of natural gas is the service territory for the ER Department; and the ER Department's service area covers the Cities of Long Beach and Signal Hill and portions of surrounding communities, including the cities Bellflower, Compton, Lakewood, Los Alamitos, Paramount, and Seal Beach. According to the *2018 California Gas Report*, the future ER Department's annual demand for natural gas is projected to reach 9.02 bcf in 2035. Because no 2040 forecast was available, the 2035 demand consumption forecast was extrapolated to the 2040 demand using the average percentage change from 2022 to 2035 projections (1.1 percent increase), as documented in the *2018 California Gas Report*.[1] The anticipated General Plan build out scenario (2040) would result in an operational natural gas demand of 4,649,160,730 kBtu (0.0046 bcf). Therefore, the anticipated 2040 natural gas demand would represent 0.05 percent of the ER Department's projected natural gas demand for the year 2040. Moreover, future development under the anticipated General Plan build out scenario (2040) would be subject to Title 24 requirements and would be evaluated on a case-by-case basis to determine the need for specific distribution infrastructure improvements. Where necessary, gas service would be added to the existing system by the ER Department to meet the requirements of individual development projects in the City. Therefore, the proposed project's contribution to cumulative natural gas impacts would be considered less than significant.

4.10.10.3 Gasoline

The geographic area for the cumulative analysis of impacts to the provision of natural gas is the State of California, as there is no local or singular provider for gasoline. According to the CEC Transportation Energy Demand Forecast 2018–2030, the demand for fuel is expected to decrease to between 12.3 billion and 12.7 billion gallons in 2030 (a 20–22 percent reduction) from the 2017 demand of 15.8 gallons). Because no 2040 forecast was available, the 2030 demand consumption forecast was extrapolated to the 2040 demand using the percentage change from 2018 to 2030 projections (20 percent total or an approximate annual decrease of 1.66 percent). Based on this extrapolation, the 2040 demand for fuel is expected to be approximately 10.7 billion gallons. The reduction in gasoline demand through the year 2040 is based on assumptions in the CEC Transportation Energy Demand Forecast 2018–2030, which includes projections that account for new energy efficiency and regulations at the State and local levels and an increasing number of electric, hydrogen, diesel, and high fuel economy vehicles.[2]

Although the proposed project would result in an increase in vehicular trips that would result in an increased demand for gasoline, new vehicles traveling within the planning area through 2040 would

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1 According to the *2018 California Gas Report*, the natural gas demand would increase by 0.42 percent, 1.67 percent, and 1.23 percent, respectively, from 2022–2025, 2025–2030, and 2030–2035. Using an average growth rate of 1.1 percent, the 2040 demand would be 9.11 bcf.

2 For reference, the Transportation Energy Demand Forecast 2018–2030 projects that the transportation electricity demand for electric vehicles is forecasted to be 17,974 GWh in a high-demand scenario. The transportation hydrogen demand for hydrogen-powered vehicles is anticipated to reach 70 million Gasoline Gallon Equivalents (GGE) in the high-demand 2030 scenario, and the transportation demand for diesel associated with diesel-powered vehicles is anticipated to reach approximately 4.6 billion gallons of diesel fuel (assumptions include on-road vehicles and rail) in the high-demand 2030 scenario.

likely have improved fuel efficiency and would increasingly be comprised of electric, hydrogen, and diesel vehicles (consistent with historic and current trends). In addition, the proposed project would support land use patterns and travel modes that would reduce the number of VMTs traveled within the planning area (a 9 percent decrease from 2018 to 2040), which would further reduce the project-related transportation energy demand. Furthermore, the project-related demand for gasoline would be minimal compared to the statewide availability of gasoline. Therefore, the proposed project's contribution to cumulative transportation energy impacts would be considered less than cumulatively significant.

4.10.11 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts of the proposed project related to energy. No mitigation would be required.

5.0 ALTERNATIVES

5.1 INTRODUCTION

Section 15126.6(a) of the *California Environmental Quality Act (CEQA) Statue & Guidelines (State CEQA Guidelines)*, Section 15126.6) requires that an Environmental Impact Report (EIR) include a discussion of a reasonable range of project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives." CEQA does not require an EIR to consider every conceivable alternative to a project, but rather it must consider a range of feasible alternatives that would assist decision-makers and the public in evaluating the comparative merits of alternatives to a proposed project. Therefore, this chapter identifies potential alternatives to the proposed General Plan Land Use and Urban Design Elements Project (proposed project) and evaluates them as required by CEQA.

Key provisions of the *State CEQA Guidelines* on alternatives (Section 15126.6[b] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR:

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the Project Objectives or would be more costly (15126.6[b]).

- The specific alternative of "no project" shall also be evaluated along with its impact (15126.6[e][1]). The "no project" analysis shall discuss the existing conditions at the time the Notice of Preparation is published and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (15126.6[e][2]).

- The range of alternatives required in an EIR is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent) (15126.6[f]).

- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (15126.6[f][2][A]).

- If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project, which must be in close proximity to natural resources at a given location (15126.6[f][2][B]).

- An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (15126.6[f][3]).

5.2 SELECTION OF ALTERNATIVES

Section 21100 of the Public Resources Code and Section 15126.6 of the *State CEQA Guidelines* require an EIR to identify and discuss a No Project Alternative and a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the proposed project and that would avoid or substantially lessen any of the significant environmental impacts. Based on the criteria listed above, the No Project Alternative and the Reduced Project Alternative have been selected to avoid or substantially lessen the significant impacts of the proposed project. Therefore, the alternatives considered in this Recirculated Draft EIR include the following:

- **Alternative 1: No Project Alternative.** This alternative would involve no amendments to the City of Long Beach's (City) General Plan, no adoption of PlaceTypes, and no changes to the existing land use designations in the City's planning documents. The existing General Plan Land Use Element (LUE) and the Scenic Routes Element (SRE) would continue to determine land uses and design principles that guide future development in the City.

- **Alternative 2: Reduced Project Alternative**. This alternative would include the same PlaceTypes as the proposed project, but would reduce the intensity of land uses throughout the City by 25 percent.

Table 5.A provides a summary of the anticipated impacts and feasibility of each alternative. A complete discussion of each alternative is provided below.

Table 5.A: Summary of Project Alternatives

Alternative	Description	Basis for Selection and Summary Analysis
Proposed Project	• Approximately 50-square-mile planning area • Updated Land Use Element (LUE) • New Urban Design Element (UDE) • 14 PlaceTypes • 2040 General Plan Anticipated Build Out: o Population increase of 18,230 persons o Employment increase of 28,511 jobs o Net increase of 28,524 units,[1] including 21,476 units to address existing overcrowding conditions ▪ 1,274 single-family units ▪ 27,250 multi-family units o Increase of 13,542,617 sf of non-residential uses	• Meets all Project Objectives • Requires General Plan Update/Amendment, along with future Local Coastal Plan Amendment and Zoning Amendment for consistency with existing planning and policy documents • Refer to Chapters 3.0 and 4.0 of this Recirculated Draft EIR
Alternative 1: No Project Alternative	• Continuation of the City's existing General Plan LUE and SRE • Does not provide housing to reduce existing overcrowding conditions and is not anticipated to be able to facilitate the same number of units required to meet the City's Regional Housing Needs Assessment (RHNA) requirements	• Required by CEQA • Does not require General Plan Update/ Amendment, Local Coastal Plan Amendment, or Zoning Amendment • Inconsistent with a majority of the Project Objectives
Alternative 2: Reduced Project Alternative	• Approximately 50-square-mile planning area • New LUE • New UDE • 14 PlaceTypes • Reduces development potential throughout the City by 25 percent as compared to the proposed project	• Requires General Plan Update/Amendment, along with future Local Coastal Plan Amendment and Zoning Amendment for consistency with existing planning and policy documents • Reduced air quality, GHG, and traffic impacts due to reductions in land use intensity • Results in fewer trips; increases peak-hour VMT due to a reduction in land use efficiency (less residential close to transit rich areas) associated with the overall development reductions; and lowers off-peak hour VMT due to an increase in shared discretionary trips associated with an increase in overcrowded units resulting from the reduction in development potential. • Consistent with some of the Project Objectives

Source: LSA (May 2019).

[1] Of the 28,524 new units, a total of 13,403 new housing units are already accommodated in recently approved specific plans (e.g., the Downtown Plan, the Midtown Specific Plan, and the Southeast Area Specific Plan).

GHG = greenhouse gas
sf = square foot/square feet
SRE = Scenic Routes Element
VMT = vehicle miles traveled

For each alternative, the analysis provides the following:

- Description of the alternative;
- Environmental analysis of the potential impacts of the alternative and the significance of those impacts (per the *State CEQA Guidelines,* significant effects of an alternative shall be discussed but in less detail than those of the proposed project);
- Overview of the potential impacts of the alternative and the significance of those impacts; and
- Summary comparison of the alternative relative to the proposed project's impacts, specifically addressing whether the alternative would meet the project's objectives; whether it would eliminate or reduce impacts compared to the project; and its other comparative merits.

5.3 ALTERNATIVES INITIALLY CONSIDERED BUT REJECTED FROM FURTHER CONSIDERATION

The following is a discussion of the development alternatives considered during the environmental review process and the reasons they were not selected for detailed analysis in this Recirculated Draft EIR.

5.3.1 Alternative Sites Considered

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant impacts of the project. The key question and first step in the analysis is whether any of the significant impacts of the project would be avoided or substantially lessened by relocating the project. Only developments or locations that would avoid or substantially lessen any of the significant impacts of the project need be considered for inclusion in the EIR (*State CEQA Guidelines*, Section 15126.6[f][2][A]). If it is determined that no feasible alternative locations exist, the EIR must disclose the reasons for this conclusion (*State CEQA Guidelines*, Section 15126.6[f][2][B]). The proposed project is the implementation of an updated General Plan LUE and a new Urban Design Element (UDE) for the entire planning area of the City. The proposed project encompasses the entire boundaries of the City and cannot be located on a different site. Because the City does not have jurisdiction over areas outside of its boundaries and cannot impose General Plan policies on such areas, no alternative sites were considered.

5.3.2 Reduced VMT Alternative/Transit-Oriented Alternative

In order to reduce significant and unavoidable air quality, GHG, and transportation impacts resulting from the proposed project (i.e., the anticipated General Plan build out 2040 scenario), consideration was given to an alternative that would reduce vehicle miles traveled (VMT) and trips generated as a result of project implementation. In order to meet this objective, the Reduced VMT Alternative/ Transit-Oriented Alternative was considered. This alternative would implement only the Low and Moderate Transit-Oriented Development PlaceTypes. This alternative would recognize the objectives of Senate Bill 743 by reducing VMT per capita in order to improve the efficiency of the transportation network. This alternative would be an amendment to the City's existing LUE and

would be implemented as an Overlay Zone intended to focus development around existing and/or proposed transit to reduce the frequency and length of trips. Growth outside the proposed Transit-Oriented Development PlaceType/Overlay Zone would continue to be subject to the existing LUE. This alternative would not include a new UDE, but rather would amend the SRE to include design guidelines within the Transit-Oriented PlaceType/Overlay Zone (including Low and Moderate areas). Therefore, this alternative would eliminate the other 12 PlaceTypes proposed as part of the LUE. The Transit-Oriented Development PlaceType/Overlay Zone would occur in the same areas as the proposed project, along existing and/or planned transit corridors, in order to reduce the frequency and length of vehicle trips. The areas outside of the Transit-Oriented Development PlaceType/ Overlay Zone would be subject to the existing LUE. This alternative would require a General Plan Update/Amendment, a Rezone Amendment, and a Specific Plan Amendment (related to the Downtown Community Plan) in order to ensure consistency with existing policy documents. A Local Coastal Plan Amendment would not be required because the Transit-Oriented Development PlaceType/Overlay Zone is not located within the Local Coastal Plan area.

The Reduced VMT Alternative/Transit-Oriented Alternative would reduce the development potential, and thereby, environmental impacts as compared to the proposed project. However, as outlined by CEQA, any alternative analyzed must balance compliance with stated Project Objectives, social and economic benefits and detriments, and the feasibility of implementing such an alternative. In consideration of the Project Objectives and the social and economic benefits of the project, it is not anticipated that this Alterative would be able to facilitate the same number of housing units required to meet the City's State-mandated housing requirements as identified as part of the Regional Housing Needs Assessment (RHNA) and the Assessment of Fair Housing (AFH). As such, this alternative would exacerbate the existing issues related to overcrowding and affordability and would cause such issues to worsen through the horizon year 2040. Furthermore, this alternative would not enable the City to meet the State's objectives of reducing VMT to the same extent as the proposed project, as it would only reduce VMT within the Transit-Oriented Development PlaceType area and would not reduce VMT citywide. For these reasons, further consideration of this alternative would not avoid or substantially lessen the significant effects of the project, would not meet Project Objectives, and would not meet the standards outlined in *State CEQA Guidelines* Section 15126.6(a) with regard to the selection of project alternatives. As such, analysis of this reduced development intensity in the Transit-Oriented Development PlaceType area was rejected from further consideration.

5.3.3 Neighborhood-Serving Centers and Corridors Commercial-Only Alternative

In order to reduce significant and unavoidable air quality, GHG, and transportation impacts resulting from the proposed project (i.e., the anticipated General Plan build out 2040 scenario), consideration was given to an alternative that included a reduced amount of development. In order to meet this objective, the Neighborhood-Serving Centers and Corridors Commercial-Only Alternative was considered. Under this alternative, the planning area would continue to be developed according to the same PlaceTypes included under the proposed project, but residential uses would be prohibited in the Neighborhood-Serving Centers and Corridors–Moderate and Low PlaceTypes. The non-residential square footage would remain the same in these PlaceTypes. Residential uses would remain permitted in the Founding and Contemporary Neighborhoods, Multi-Family Residential-Low

and Moderate, Transit-Oriented Development-Low and Moderate, Neo-Industrial, and Downtown PlaceTypes.

However, when the environmental impacts associated with this alternative were considered, none were substantially different or resulted in reduced environmental impacts as compared to the alternatives identified in Sections 5.5 and 5.6, below. Further, as outlined by CEQA, any alternative analyzed must balance compliance with stated Project Objectives, social and economic benefits and detriments, and the feasibility of implementing such an alternative. In consideration of these objectives for alternatives, it was determined that the No Project Alternative and the Areas of Major Change Alternative would result in similar, if not more significant, reductions in the environmental impacts resulting from the proposed project. As such, this reduced intensity alternative would not avoid or substantially lessen the significant effects of the project, would not meet Project Objectives, and would not meet the standards outlined in *State CEQA Guidelines* Section 15126.6(a) with regard to the selection of project alternatives. For these reasons, analysis of this alternative was rejected from further consideration.

5.4 PROPOSED PROJECT

5.4.1 Project Characteristics

As described earlier in Chapter 3.0, Project Description, the proposed project would result in an update to the City's existing General Plan. The proposed project includes the approval of both the General Plan LUE and UDE, which would replace the existing LUE and SRE.

The proposed LUE would replace the existing 1989 General Plan LUE. 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 uses 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 existing General Plan does not currently include an UDE. The UDE would define the physical aspects of the urban environment. Specifically, the UDE aims to 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. In addition, 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.

As illustrated in Chapter 3.0, Project Description, and Table 3.B, Anticipated Project Build-Out Summary, compared to existing conditions, the proposed LUE would accommodate a population increase of 18,230 persons, an employment increase of 28,511, and a net increase of 28,524 units by the year 2040. More specifically, as illustrated by Tables 3.B through 3.D in Chapter 3.0, the proposed project would allow for an increase in 28,524 dwelling units (1,274 and 27,250 single-

family and multi-family, respectively) and would accommodate an increase of 13,542,617 square feet (sf) of non-residential uses to accommodate employment growth. The project would also accommodate an increase in population and employment by 18,230 people and 28,511 jobs, respectively. With the exception of housing, these projected increases in housing units, population, and employment are consistent with 2016–2040 growth projections developed by the Southern California Association of Governments (SCAG) for the region. The project-related increase in housing units is greater than SCAG projections, but is consistent with the number of housing units that were determined to be required in the City not only as part of the RHNA process, but also as identified in the AFH to address existing overcrowding.

5.4.2 Project Objectives

Each alternative is analyzed to determine whether it achieves the basic objectives of the proposed project. As stated in Chapter 3.0, Project Description, the City has established the following intended specific objectives for the General Plan updated LUE and new UDE that would serve to aid decision-makers in their review of the proposed project and its associated environmental impacts:

1. Promote livability, including environmental quality, community health and safety, the quality of the built environment, and economic vitality.

2. Meet the City's housing needs as identified in the and Regional Housing Needs Assessment Requirement (7,048 new dwelling units by the year 2021) and the Assessment of Fair Housing (21,476 housing units to address existing housing needs) by diversifying housing opportunities through the provision of a variety of housing types and the provision of market-rate and affordable housing units.

3. Accommodate strategic growth in the Downtown area, around regional-serving facilities, along major corridors, and in transit-oriented development areas; create and preserve open space; accommodate economic development by converting industrial areas to neo-industrial uses in appropriate locations, promote regional-serving uses, convert industrial uses to commercial uses in locations more suitable for commercial character, and revitalize the Waterfront areas.

4. Implement sustainable planning and development practices by creating compact new developments and walkable neighborhoods to minimize the City's contribution to greenhouse gas emissions (GHGs) and energy usage.

5. Create job growth allowing for new businesses while also maintaining and preserving existing employment opportunities at the City's regional facilities and employment centers. Promote increased employment opportunities for Long Beach residents at differing levels of educational and skill attainment.

6. Promote changes in land use and development that reflect changes in the regional economy. Promote land uses that transform now-vacant or under-utilized former employment centers into new sources of employment.

7. Provide high-quality housing in a variety of forms, sizes, and densities to serve the diverse population of the City.

8. Preserve low-density neighborhoods while improving pedestrian, bicycle, and transit access in these areas.

9. Ensure fair and equitable land use by making planning decisions that would ensure the fair and equitable distribution of services, amenities, and investments throughout the City.

10. Provide reliable public facilities and infrastructure by expanding and maintaining the current infrastructure to serve new and existing developments in the City.

11. Increase access to green and open space through the creation of urban open spaces and greenscapes and providing for clean beaches, waterways, preserves, and parklands.

12. Restore and reconnect with local natural reserves through the utilization of clean energy, best management practices (BMPs), and current technologies.

13. Create "Great Places" places by improving the connectivity, the visual appearance of and development of public spaces; promote sustainable design practices; encourage design techniques that foster economic development; preserve historic districts and the unique character of each neighborhood; provide for public art; and expand the unified sign program to increase wayfinding within neighborhoods and PlaceTypes.

14. Improve the urban fabric by creating complete neighborhoods and community blocks, properly place and design new development to prevent visual and land use conflicts; promote compact urban and infill development, clearly define boundaries between natural and urbanized areas, preserve iconic buildings; and provide pedestrian furniture and wide sidewalks to create walkable blocks.

15. Preserve the City's natural features, open space, and parks throughout the City, while also providing new public spaces throughout the community, parks, and plazas at infill sites, and parklets along sidewalks, particularly in areas with the least access to greenspace.

16. 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.

17. Promote high-quality design of the built environment. Enhance visual interest, improve functionality and inspire pride through thoughtful design, high-quality materials and a diversity of architectural styles throughout neighborhoods and the entire City.

5.4.3 Significant Unavoidable Impacts of the Proposed Project

As described further in Chapter 2.0, Introduction, the proposed project would result in either no impacts or less than significant impacts related to the following topics: agricultural resources, biological resources, cultural and tribal cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, recreation, and wildfires.

As described in Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures, the proposed project would result in less than significant impacts related to aesthetics, land use, population and housing, public services, utilities, and energy. The proposed project would result in significant unavoidable impacts related to air quality, GHG emissions, noise, and transportation.

For the purpose of this analysis, it is assumed that all of the alternatives would comply with applicable federal, State, and local regulations, policies, and ordinances. It is also assumed that all mitigation measures required for project implementation would apply to the project alternatives and similar reductions in impacts would be achieved through such mitigation. Therefore, the following discussion focuses on the ability of the alternatives to reduce project impacts and the potential impacts of the project alternatives related to these issues.

5.5 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

5.5.1 Description

Consistent with Section 15126.6 of the *State CEQA Guidelines*, the No Project Alternative assumes implementation of the existing General Plan LUE (1989) and SRE (1975) instead of the proposed General Plan update. Under the No Project Alternative, existing land uses would remain in place and future development in the City would occur as anticipated in a reasonable manner as currently allowed under the General Plan LUE (1989). Socioeconomic projections that were identified for the City in the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) would continue to occur within the planning area through the year 2040 under the No Project Alternative. The distribution and location of projected growth would occur in a manner that is consistent with the City's existing General Plan and zoning documents, which segregates residential, commercial and industrial land uses and accommodates for limited growth in most areas. Continuation of this approach could exacerbate existing housing issues in the City related to affordability and overcrowding that developed over the implementation period of the existing LUE.

As previously stated, the existing 1989 LUE contains a General Plan Land Use Map and a discussion of the intended and allowable uses within each land use type. The existing LUE determines land use on a parcel-by-parcel basis. In addition to a description and map of land use categories, the existing 1989 LUE establishes goals and objectives aimed at guiding the pattern of development in the City focused on segregating land uses and controlling the rate of development.

The existing General Plan does not currently include a UDE. However, the existing SRE designates roadways within the City for which view protection should be considered and establishes varying design standards to ensure the continued maintenance of the aesthetic character of these roadways.

The No Project Alternative would allow for the existing LUE and SRE to continue to function as they currently do into the foreseeable future. Development under the existing General Plan would be the same as compared to the proposed General Plan Update, but would include 15,121 fewer housing units than the proposed project.[1] Under the No Project Alternative, growth would occur in a manner that is consistent with the approved LUE. Based on the approved LUE and associated specific plans, the majority of development is anticipated to occur along the Long Beach Boulevard Corridor (Midtown Specific Plan), and in the Downtown (Downtown Community Plan) and the South East Area Specific Plan (SEASP) areas. As such, the No Project Alternative assumes that the existing General Plan and zoning would remain unchanged and that future growth would not be concentrated in these area but would occur throughout the City.

5.5.2 Environmental Analysis

5.5.2.1 Aesthetics

Future development allowed under the existing LUE (1989) and SRE would be evaluated for consistency with development standards related to scenic vistas currently adopted under the existing LUE, SRE, Municipal Code, and/or Specific Plans. Therefore, continuation of the existing LUE and SRE under the No Project Alternative would not result in the obstruction or degradation of existing scenic vistas, and impacts would be less than significant.

The No Project Alternative could result in changes to the visual character of the City and its distinct neighborhoods due to future development within the Planning Area. However, goals, policies, and objectives outlined in the existing LUE and SRE would prevent the substantial degradation of visual character, resulting in a less than significant impact.

Artificial lighting would be included as part of future developments under the existing LUE and SRE. Exterior lighting would likely be located along streets, within parking lots, on buildings, on signs, and along walkways. Interior lighting would include building lighting that could be visible from outside. While new and substantially renovated projects could cause the addition of lighting sources within the planning areas, these would be consistent with existing lighting levels due to the existing urban nature of the City. Moreover, due to the built-out nature of the City, existing sources of glare are already present throughout the City. The sources of glare are not anticipated to change under the No Project Alternative. As such, impacts related to light and glare would be less than significant.

Because the No Project Alternative would develop fewer housing units than the proposed project, it would result in fewer changes to the viewsheds throughout the City. However, the proposed project would result in the replacement of older housing with newer construction, thereby improving the visual quality within some neighborhoods, unlike this alternative. Overall, impacts to aesthetics would continue to be less than significant for the No Project Alternative and the proposed project.

[1] The No Project Alternative allows for the continuation of the existing LUE, which includes adopted specific plans. Of the 28,524 new housing units that are included as part of the proposed project and are needed to address affordability and overcrowding, a total of 13,403 new housing units are already accommodated in recently approved specific plans (e.g., the Downtown Plan, Midtown Specific Plan, and Southeast Area Specific Plan).

5.5.2.2 Air Quality

The No Project Alternative is based on the continued implementation of the existing General Plan LUE (1989) and SRE (1975). The No Project Alternative would result in the same amount of population and employment growth as the proposed project, consistent with growth projections, outlined measures, and mitigation due to the speculative nature of the land use plan (i.e., the timing and amount of growth are unknown at this time) and the lack of project-specific details upon which to base air emissions. The No Project Alternative would allow for a series of individual projects to be implemented consistent with the existing LUE (1989). Similar to the proposed project, it is not possible to accurately analyze the future project-specific impacts because construction details vary by project based on parcel size, construction schedule, building size, and the amount of paving and utility construction, etc. Therefore, similar to the proposed project, the No Project Alternative would result in significant unavoidable construction impacts related to the violation of air quality standards due to the unknown and speculative nature of future development.

While both the No Project Alternative and the proposed project would result in significant air quality impacts, the proposed project would result in the potential development of more housing units (resulting in additional construction impacts and vehicular trips) than the No Project Alternative. Therefore, the No Project Alternative would likely result in fewer air quality impacts than those associated with the proposed project. However, it should be noted that the No Project Alternative would not result in the establishment of the Neo-Industrial PlaceType, which is aimed at minimizing air quality impacts by establishing a light-industrial buffer zone between existing high-emitting industrial uses and residential uses in the City as well as other policies and programs such as the Green Zones implementation measure.

As discussed further in Section 4.3, Air Quality, horizon year 2040 emissions would decrease due to the overall decrease in VMT and reduction in vehicle emission rates that would occur with or without the proposed project. However, the No Project scenario would continue to result in significant and unavoidable operational impacts associated with the violation of air quality standards despite the implementation of mitigation because emissions levels would remain above SCAQMD regional significance thresholds. Moreover, because the South Coast Air Basin is in nonattainment for particulate matter less than 2.5 microns in size and particulate matter less than 10 microns in size ($PM_{2.5}$ and PM_{10}, respectively) and O_3, the No Project scenario would make a cumulatively considerable contribution to criteria pollutant emissions.

There would be construction of fewer residential units under the No Project Alternative, and therefore, construction emissions would be reduced as compared to the proposed project. On average, the maximum construction emissions associated with the proposed 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 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 for the proposed project. Therefore, although the No Project Alternative could result in lower construction and operational air quality emissions than the proposed project, it would, similar to the proposed project, have significant and adverse impacts related to criteria pollutants given the unknown quantity and timing of construction.

The proposed project would not result in significant unavoidable impacts related to the exposure of sensitive receptors to substantial localized CO concentrations. 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. Continuation of future development consistent with the 1989 LUE would result in some intersections operating better and some intersections operating worse than the proposed project. As such, similar to the proposed project, it is anticipated that the No Project Alternative would not produce the volume of traffic required to generate a CO hot spot. Therefore, similar to the proposed project, implementation of the No Project Alternative would not be expected to result in CO hot spots. Impacts would be less than significant under the No Project Alternative.

Similar to the proposed project, development under the existing LUE would not create objectionable odors. Applicants for future projects would continue to be required to adhere to standard construction requirements aimed at minimizing odors from construction. Future developments would also be required to adhere to the City's solid waste regulations to ensure that project-generated refuse would be stored in covered containers and trash removed at regular intervals. Similar to the proposed project, the No Project Alternative would result in less than significant odor impacts.

Overall, air quality impacts anticipated under the No Project Alternative would be similar to those identified for the proposed project and many would remain significant and unavoidable. However, because the proposed project would allow for additional growth in housing and would result in an increase in VMT, impacts associated with the No Project Alternative would be incrementally fewer than under the proposed project.

5.5.2.3 Greenhouse Gas Emissions

The anticipated General Plan build out proposed as part of the project was determined to result in less than significant impacts related to conflicts with plans adopted for the purpose of reducing GHG emissions following implementation of mitigation requiring adoption of a GHG Reduction Plan or Climate Action and Adaptation Plan (CAAP). However, operational GHG impacts on the environment as a result of anticipated build out of the proposed project were considered to be significant and unavoidable despite the implementation of mitigation.

As previously stated, the No Project Alternative would allow for the continuation of development in the City in a manner that is consistent with the existing 1989 LUE. Future growth envisioned under the No Project Alternative would result in a reduction in GHG emissions as compared to the proposed project. As described further in Section 4.3, Greenhouse Gas Emissions, the No Project Scenario would result in 1,628,900 MT CO_2e/year (2.4 MT CO_2e/year per service population) whereas the proposed project would result in 1,670,419 MT CO_2e/year (2.5 MT CO_2e/year per service population). The reduction in GHGs under the No Project scenario is largely attributed to the decrease in citywide VMT associated with this scenario as compared to existing 2018 conditions. It should be noted that the decrease in VMT associated with the No Project scenario is largely attributed to shared discretionary rides between multiple families living in the same unit due to

overcrowding conditions in the City. Therefore, implementation of the No Project Alternative would result in fewer GHG emissions than the proposed project.

5.5.2.4 Land Use and Planning

The No Project Alternative would allow for continued development within the planning area, consistent with the existing 1989 LUE. The types, intensities, location, and urban design of land uses would remain as approved under the existing LUE and SRE and would not result in impacts related to land use nor would it conflict with existing land use policies, as the existing General Plan is the guiding land use document for development within the City. Further, implementation of the existing LUE and SRE Plan would not physically divide an existing community. Therefore, the No Project Alternative would not interfere with any existing land use plans for the planning area. Because the No Project Alternative would not require amendments to the General Plan, Local Coastal Plan, or Zoning Code, land use and planning impacts would be slightly reduced as compared to the proposed project. While conflicts with local policies and plans regarding land use would be reduced under this alternative, it should be noted that the No Project Alternative would result in conflicts with state recommendations provided by the State Office of the Attorney General. Specifically, the No Project Alternative would conflict with the State's recommendation that General Plans be updated "periodically" (typically every 10 to 20 years) in order to address changes to State law; reflect current community values; update technical information (e.g., Census data); and respond to changing conditions in the environment, economy, and community. The No Project Alternative would also be inconsistent with the 2016–2040 RTP/SCS adopted by SCAG because the plan itself would not have a correct horizon year (2040) or target population, and would not allow for transit-oriented development along all high-quality transit corridors. The No Project Alternative would not meet the overall goals established in the RTP/SCS to the same degree as the proposed project.

5.5.2.5 Noise

The No Project Alternative would allow for development consistent with the existing LUE and SRE. The types, intensities, and location of land uses would remain as currently approved under the existing General Plan Elements. Sources of noise within the planning area would remain substantially similar to existing conditions or incrementally increase as growth occurs, with the primary source remaining vehicle roadway noise.

Construction noise impacts associated with the proposed project were identified as significant and unavoidable even after mitigation since the location, the proximity to sensitive receptors, and the types of construction equipment associated with new construction projects are all unknown at this time. The No Project Alternative would result in fewer residential units than the proposed project and therefore, would result in reduced noise impacts associated with construction and operation of residential uses as compared to the project. However, construction noise impacts would, similar to the proposed project, still be considered significant and unavoidable as the location and types of construction equipment are unknown at this time. In addition, development under the existing LUE could result in the exposure of sensitive receptors to elevated noise levels and strong vibration due to construction activities, because the No Project Alternative does not include a policy requiring an acoustical analysis for discretionary noise sensitive projects located in an area with noise levels greater than 60 dBA CNEL and/or within 500 feet of a freeway (proposed LUE Policy LU 16-8).

Consequently, the No Project Alternative would result in reduced noise levels and sources as compared to the proposed project, but could have greater noise and vibration impacts for sensitive receptors in areas with noise levels greater than 60 dBA CNEL and/or within 500 feet of a freeway as compared to the proposed project.

5.5.2.6 Population and Housing

The current 2016–2040 RTP/SCS SCAG growth projections are based on the General Plans and Housing Elements of communities across Southern California, including Los Angeles County and the City. The City has worked closely with SCAG to develop growth projections for the 2016–2040 RTP/SCS that are aligned with future growth envisioned under the proposed project. Therefore, the 2016–2040 RTP/SCS accounts for the population and employment estimates accommodated by the proposed project. However, the proposed LUE also incorporates housing projections provided by the Department of Housing and Community Development. Specifically, 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, and an undetermined number in future years. Further, due to insufficient construction of new housing units within Long Beach and the region in the past, 21,476 housing units were determined to be required to address existing housing needs that have led to overcrowding due to lack of sufficient units. In total, 28,524 housing units are required to address future (7,048) and existing (21,476) housing needs. Of the 28,524 new units, 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 proposed project would facilitate the development of 15,121 new housing units outside of these specific plan areas.

The No Project Alternative would allow for existing development patterns to occur in a manner that is consistent with the existing LUE and SRE. Under these existing plans, the City may not be able to accommodate housing at a density that would allow for the number of housing units that are required to alleviate existing overcrowding issues and provide affordable housing opportunities. Rather, the No Project Alternative would continue to exacerbate overcrowding in the planning area and would worsen conditions related to affordability, as the demand for housing would continue to increase as population growth occurs as projected by SCAG's 2016–2040 RTP.

Similarly, the No Project Alternative would not allow for the same level of employment opportunities required to accommodate projected employment growth because development would occur at a lower intensity and scale in accordance with the existing LUE. As such, the No Project Alternative would result in a lower jobs-to-housing ratio than the proposed project. The No Project Alternative would also be inconsistent with the City's objective to comply with State-mandated affordable housing options as required by the RHNA process and the AFH conducted by the U.S. Department of Housing and Urban Development (HUD). Moreover, failure to comply with the RHNA mandate is enforceable through the Housing Accountability Act and could result in a loss of funding to the City, consistent with State law and recent actions by the State aimed at holding

[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).

cities accountable to meeting their RHNA requirements. For these reasons, impacts related to population and housing would be significantly worse under the No Project Alternative as compared to the proposed project.

5.5.2.7 Public Services

Under the No Project Alternative, development would occur throughout the planning area as permitted by the existing 1989 LUE. Of the 28,524 housing units that are needed to address issues related to affordability and overcrowding, the No Project Alternative would only account for 13,403 housing units that are already accounted for in approved specific plans. Therefore, the No Project Alternative would result in fewer impacts related to police and fire facilities as compared to the proposed project. However, continuing development under the existing LUE could still result in a significant impact to police and fire services due to the scale and nature of future growth in the City as projected under the 2016–2040 RTP/SCS. Therefore, similar to the proposed project, the No Project Alternative could potentially result in the need for additional police and fire staffing and equipment. Similar to the proposed project, future projects would be reviewed by the City on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted fire and/or police facilities impact fees. Additional police and fire personnel and resources would be provided through the annual budget review process. However, similar to existing conditions of overcrowding, it is likely that population growth would still occur even without construction of adequate housing. Increased population without construction of new housing units would strain public services as development impact fees would not be collected. Although this overcrowded condition could result in greater impacts on police and fire services as compared to the proposed project, the No Project Alternative is still considered in a less than significant impact. Impacts to police and fire services would continue to be less than significant under both the proposed project and No Project Alternative.

Under the No Project Alternative, impacts to libraries and schools would be similar to the proposed project because population and employment growth would be similar to the proposed project. As with the proposed project, future development projects would be required to pay school developer fees to Long Beach Unified School District (LBUSD) for the operation, maintenance, and development of schools to accommodate future student enrollment. Additional school resources would also continue to be funded by an increase in tax revenue because of future growth. However, similar to existing conditions of overcrowding, it is likely that population growth would still occur even without construction of adequate housing. Increased population without construction of new housing units would strain school resources, as development impact fees would not be collected. This overcrowded condition could result in greater impacts on schools as compared to the proposed project although overall impacts would still be considered less than significant. Impacts to libraries would be less than significant because the increased demand for library facilities would be met by an increase in electronic resources that would be accommodated by existing libraries located throughout the planning area. Impacts to library facilities would continue to be less than significant under both the proposed project and the No Project Alternative.

For the reasons stated above, impacts to public services would be similar to, although slightly greater than, under the No Project Alternative as compared to the proposed project.

5.5.2.8 Traffic and Transportation

Under the No Project Alternative, development would occur consistent with the 1989 LUE and SRE. As described further in Section 4.8, Transportation, traffic under the existing LUE would result in some intersections operating better and some intersections operating poorer than the proposed project due to the redistribution of land uses. Even with the implementation of physical improvements aimed at improving traffic flow at congested intersections, both the proposed project and the No Project Alternative would result in significant unavoidable transportation impacts as some improvements may not be feasible (e.g., located outside of the City's jurisdiction, or insufficient rights-of-way for improvements, etc.).

Although transportation impacts to intersections and roadways within the City would be significant and similar under the No Project Alternative and the proposed project, VMT per capita would slightly increase under the proposed project as compared with No Project Alternative (18.0 VMT per capita under the proposed project scenario as compared to 18.2 VMT per capita under the No Project scenario). This increase in VMT is attributed to the increase in housing units attributed to the proposed project. In other words, because the proposed project reduces overcrowding compared to the existing LUE, the number of discretionary trips increases, as does the total VMT. Although VMT per capita is anticipated to increase under the proposed project, the total VMT per household is anticipated to decrease due to the distribution of land uses under the proposed project. Specifically, the No Project scenario would result in 49.9 VMT per household whereas the proposed project would result in 46.1 VMT per household.

Overall, impacts related to transportation would be similar to, although slightly less than, those identified for the proposed project.

5.5.2.9 Utilities

Under the No Project Alternative, development would occur throughout the planning area as allowed by the existing LUE and SRE. Population and employment growth projections for the City that are outlined in the 2016–2040 RTP/SCS and are accommodated in the proposed LUE are also accounted for within the existing Urban Water Management Plan (UWMP) approved by the City. However, anticipated build out of the proposed project would allow for an increase in residential dwelling units (28,524 units) beyond what is outlined in the 2016–2040 RTP/SCS and is accounted for in the existing UWMP in order to provide sufficient housing units to address overcrowding.

Under the proposed project, the project-related increase in water demand in 2040 would be 59,105 acre-feet, or less than one percent of the Long Beach Water Department's (LBWD) total projected water supply for the year 2040. Similar to the proposed project, the No Project Alternative would be required to comply with Title 24 provisions regarding the use of water-efficient features and policies and programs outlined in the 2015 Water Quality Management Plan (WQMP). However, the No Project Alternative would not require future developments to comply with the water reduction measures outlined in the proposed LUE. The No Project Alternative would result in fewer housing

units than the proposed project, which could result in a reduced demand for water supplies. However, it is important to note that a decreased demand for water in the City under the No Project Alternative may not occur, as the majority of new units accommodated by the proposed project are needed to alleviate overcrowding of existing residents that are already using water. Therefore, the No Project Alternative would result in a demand for water that would be similar to, or slightly reduced than the demand for water under the proposed project. Impacts would continue to be less than significant under both scenarios.

The estimated wastewater flow associated with build out of the proposed project would be approximately 43 million gallons per day (mgd), which would represent approximately 4 percent of the remaining capacity of existing County Sanitation Districts of Los Angeles County (LACSD) facilities. The No Project Alternative would likely result in a decrease in wastewater flow due to the reduction in the number of housing units envisioned under this alternative. However, wastewater flows may be similar to the proposed project, as the majority of new housing units to be developed as part of the project are required to alleviate overcrowding of existing housing units with current Long Beach residents who are already generating wastewater. Therefore, the No Project Alternative would result in a demand for wastewater treatment facilities that would be similar to, or slightly reduced as compared to the demand under the proposed project. Impacts would continue to be less than significant under both scenarios.

As compared to the proposed project, the No Project Alternative has a reduced development potential due to the decrease in housing units proposed under this alternative. However, similar to the proposed project, future individual projects occurring under the No Project Alternative could increase impervious surface area, which could reduce infiltration and increase runoff. Under both alternatives, future projects would be reviewed on a project-by-project basis and would need to comply with any construction or post-construction requirements in effect when the review is conducted, including payment of Development Fees to fund future improvements to the City's stormwater infrastructure. Therefore, the No Project Alternative would result in impacts related to stormwater runoff and storm drain facilities that would be similar to, or slightly reduced, as compared to impacts identified for the proposed project. Impacts would continue to be less than significant under both scenarios.

As previously stated, the No Project Alternative would accommodate population and employment growth projected for the City by SCAG in the 2016–2040 RTP/SCS, but would result in 15,121 fewer housing units than proposed under the General Plan Update. Impacts related to the demand for new or renovated telecommunications facilities are determined based on population demand. As such, the demand for telecommunications facilities under the No Project Alternative would be the same as under the proposed project, as both alternatives assume the same amount of population growth. Impacts would continue to be less than significant under both scenarios.

Solid waste generation rates are higher for residential uses as compared to commercial and industrial uses. Given the reduction in housing units proposed under the No Project Alternative compared to the proposed project, the No Project Alternative is anticipated to result in a reduction in solid waste generation as compared to the proposed project. Because existing waste processing and disposal facilities could accommodate the increase in solid waste generated by the proposed

project, the reduced demand for solid waste facilities under the No Project Alternative would also be accommodated by existing facilities, resulting in similar impacts. Impacts would continue to be less than significant under both scenarios.

5.5.2.10 Energy

Under the proposed project, the projected electricity demand in the City would be 1,950,216,130 kilowatt hours (kWh) in 2040 (approximately 17.18 percent greater than the existing electricity demand). The electricity demand associated with the No Project Alternative would likely be reduced as compared to the proposed project due to the decrease in development potential and the associated reduction in housing units. As with the proposed project, new facilities required to support the project-related demand for electricity would be constructed in accordance with the demand for the new service. Therefore, the No Project Alternative would result in impacts related to electricity that would be similar to, or slightly reduced, than impacts identified for the proposed project. Impacts would continue to be less than significant under both scenarios.

Future development occurring under the proposed project would generate a natural gas demand of 4,649,160,730 in 1,000 British thermal units (kBtu), or an approximately 16.34 percent increase in natural gas demand. The natural gas demand associated with the No Project Alternative would likely be reduced as compared to the proposed project due to the decrease in development potential and the associated reduction in housing units. As with the proposed project, natural gas service will be added to the existing system operated and maintained by the Long Beach Energy Resources Department, as necessary, to meet the requirements of individual projects within the City under the No Project Alternative. Impacts would continue to be less than significant under both scenarios.

The No Project Alternative would allow for the continuation of development in the City in a manner that is consistent with the existing 1989 LUE. Future growth envisioned under the No Project Alternative would result in a reduction in VMT as compared to the proposed project (18 VMT per capita compared to 18.2 VMT per capita). This reduction in VMT is largely attributed to the decrease in housing growth allowed under the No Project Alternative. Although the No Project Alternative would result in a slight reduction in VMT per capita, the proposed project would result in an overall reduction in VMT per household as compared to the No Project Alternative (49.9 VMT per household compared to 46.1 VMT per household). Therefore, the No Project Alternative would likely result in an increase in gasoline demand per household as compared to the proposed project, but would result in a lower demand on a per capita basis. Under both alternatives, vehicle fuel efficiency is expected to increase as new fuel economy standards are established. Therefore, the No Project Alternative would result in impacts related to gasoline demand that are similar to the proposed project. Impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources would continue to be less than significant under both scenarios.

5.5.3 Overview of Potential Impact/Comparison to Proposed Project

Under the No Project Alternative, development would continue as allowed under the 1989 General Plan LUE and 1975 SRE and is anticipated to result in 15,121 fewer housing units as compared to the proposed project. The No Project Alternative would not require a General Plan Update/Amendment, Local Coastal Plan Amendment, or Rezone Amendment. No change to the adopted land use

designations would occur. Overall, impacts for the No Project Alternative would be similar to the proposed project. However, similar to the proposed project, under the No Project scenario, significant unavoidable air quality, GHG, noise, and traffic impacts would continue to occur.

5.5.4 Project Objectives

The No Project Alternative would not achieve any of the 17 Project Objectives. The No Project Alternative would not help the City achieve its goal of creating great places through the establishment of new PlaceTypes and urban design principles not currently provided in the City's General Plan. Although the No Project Alternative would accommodate the same amount of population and employment growth as the proposed project, this alternative would be inconsistent with the project and the City's objective to comply with State-mandated affordable housing options as required by the RHNA process and the AFH conducted by the United States Department of Housing and Urban Development. Moreover, failure to comply with the RHNA mandate is enforceable through the Housing Accountability Act and could result in a loss of funding to the City and legal action by the State, as evidenced by the State's recent actions elsewhere in Southern California. Therefore, the No Project Alternative would exacerbate existing issues related to overcrowding, would likely decrease affordability, and could result in punitive actions by the State because of the City's failure to meet its affordable housing requirements.

5.6 ALTERNATIVE 2: REDUCED PROJECT ALTERNATIVE

5.6.1 Description

This Reduced Project Alternative assumes the planning area would be subject to the LUE and UDE goals, strategies, and policies similar to those included under the proposed project, but with adjustments to the proposed PlaceType intensities. This alternative would decrease overall intensities by 25 percent on a citywide basis as compared to the proposed project. In total, Alternative 2 would facilitate 21,393 dwelling units (7,131 fewer residential units than the proposed project) and 10,156,963 square feet of non-residential uses (3,385,654 fewer non-residential square feet than the proposed project). Alternative 2 would require a General Plan Update/Amendment, a future Local Coastal Plan Amendment, and a Rezone Amendment, similar to the proposed project.

5.6.2 Environmental Analysis

5.6.2.1 Aesthetics

Similar to the proposed project, Alternative 2 would have less than significant impacts related to scenic vistas, scenic resources, light, glare, and the existing visual character of the planning area and its surroundings. As stated previously, Alternative 2 would reduce building intensity by 25 percent throughout the City as compared to the proposed project. Unlike the proposed project, buildings proposed as part of Alternative 2 would be constructed at reduced heights associated with the reduction in allowable building intensity and density under this alternative. The reduction in building heights under this alternative would reduce impacts related to view obstructions in areas considered as scenic vistas and would also reduce changes related to visual character as compared to the proposed project. However, like the proposed project, this alternative would be required to comply with applicable policies regulating urban design and building form in the proposed UDE that

would serve to minimize impacts related to aesthetics under this alternative. In addition, new development proposed under Alternative 2 would also be required to comply with the City's Municipal Code, which includes lighting and landscaping standards. Overall, the reduction in building intensity and density proposed under this alternative would result in fewer impacts related to aesthetics than the proposed project. Therefore, the overall visual impacts of Alternative 2 would be reduced as compared to the project, but impacts to visual resources would continue to be less than significant under both scenarios.

5.6.2.2 Air Quality

Alternative 2 would, unlike the proposed project, be consistent with the 2016 AQMP because the population and employment is not anticipated to increase over the 2016–2040 growth projections developed by SCAG for the region and the housing units allowed would be consistent with the assumptions in the 2016 AQMP emission inventory. Therefore, Alternative 2 would, unlike the proposed project, have less than significant impacts related to conflicts with adopted air quality management plans.

Potential construction and operational emissions associated with Alternative 2 would be less than the proposed project because this alternative reduces the potential square footage of building through a 25 percent reduction in land use intensities and development potential throughout the City. However, similar to the proposed project, Alternative 2 could exceed significance thresholds for criteria pollutants during construction and operation and such impacts would remain significant and unavoidable. Overall, impacts would be incrementally reduced during construction and operation when compared to the proposed project due to the reduced amount of building square footage accommodated by this alternative.

Similar to the proposed project, Alternative 2 would result in less than significant impacts related to the exposure of sensitive receptors to substantial localized CO concentrations. Alternative 2 would result in a reduction in traffic volumes throughout the City due to the reduction in building potential. Therefore, implementation of Alternative 2 could result in some intersections operating better than the proposed project. However, similar to the proposed project, Alternative 2 would not produce the volume of traffic required to generate a CO hot spot (e.g., more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix). Therefore, similar to the proposed project, implementation of Alternative 2 would not be expected to result in CO hot spots. Impacts would be less than significant under Alternative 2.

Similar to the proposed project, Alternative 2 could also result in the exposure of sensitive receptors to substantial pollutants. 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 to ensure that potential construction and operational impacts would be less than significant. Although Alternative 2 would expose fewer sensitive receptors to substantial pollutants because there would be less construction than under the proposed project, with implementation of these measures, impacts for Alternative 2 would be similar to the proposed project and remain less than significant.

Similar to the proposed project, Alternative 2 could expose sensitive receptors to toxic air contaminants. Preparation of project-specific technical health risk assessments evaluating operational-related health risk impacts would be required to ensure that operational-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. However, 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 Alternative 2 are assumed to be potentially significant, similar to the proposed project.

Impacts related to the exposure of a substantial number of people to odors would be similar and less than significant under both the proposed project and Alternative 2, as future projects occurring under both scenarios would be required to comply with SCAQMD rules and applicable provisions of the City's Municipal Code regulating nuisance odors.

Overall, there would be fewer air quality emissions for Alternative 2 as compared to the proposed project, but impacts would remain significant and adverse, similar to the proposed project.

5.6.2.3 Greenhouse Gas Emissions

Because Alternative 2 would accommodate the development of up to 21,393 dwelling units and 10,156,963 square feet of non-residential uses it would, similar to the proposed project, have significant impacts related to GHG emissions. GHG emissions would likely exceed the 2040 per capita efficiency target of 1.92 MT CO_2e/yr per service population as presented in the GHG Emission Reduction Target Options Memorandum that accompanies the City's draft CAAP.

Overall, GHG emissions would be incrementally less during construction when compared to the proposed project due to the reductions in land use intensities allowed under this alternative. GHG emissions would also be lower due to the reduced amount of building materials that would need to be produced and transported to the planning area to complete the construction.

Under this alternative and the proposed project, future development would be designed to meet and exceed all California Green Building Standards Code (CALGreen Code) building efficiency standards (Title 24, Part 11) and the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6), which would reduce energy consumption. Although Alternative 2 would result in a reduction of development potential which could reduce operational emissions, this reduced project alternative would allow for fewer new, more efficient buildings, which could actually increase operational emissions. In addition, while vehicle trips are projected to decrease under this alternative, it is anticipated that peak-hour VMT would increase because of reduce land use efficiency associated with the reduced development in close proximity to transit rich areas under this alternative. However, overcrowding is anticipated to be worse under Alternative 2 than under the proposed project scenario, which according to the traffic model would reduce off-peak VMT because of shared discretionary trips (e.g., the model assumes that several families living in the same household in overcrowded conditions commute to the grocery store together). Therefore, GHG emissions associated with VMT would only be incrementally lower than GHG emissions associated with anticipated General Plan build out under with the proposed project (2040).

Overall, GHG emissions would be reduced for Alternative 2 compared to the proposed project, but would remain significant and adverse under both scenarios, as the per capita efficiency target would likely be exceeded.

5.6.2.4 Land Use

Similar to the proposed project, Alternative 2 would have less than significant impacts related to land use and planning. Under this alternative, as well as the proposed project, there would be no impacts related to the division of an existing community. Similar to the proposed project, Alternative 2 would require the approval of a General Plan Update/Amendment, future Local Coastal Plan Amendments, Zoning Amendments, and amendments to existing Specific Plans (e.g., Downtown Community Plan). Alternative 2 would also be consistent with the majority of policies contained in the City's General Plan, the California Coastal Act, the Regional Comprehensive Plan, and the 2016–2040 RTP/SCS. Therefore, impacts related to land use for Alternative 2 are considered similar to those associated with the proposed project. Impacts would remain less than significant under both scenarios.

5.6.2.5 Noise

Similar to the proposed project, Alternative 2 would result in significant and unavoidable impacts related to construction noise. Construction activity associated with Alternative 2 would be incrementally less due to the reduction in the potential amount of construction, but would generally result in similar noise and vibration levels since the construction and excavation areas, methods, and equipment would be similar. Short-term construction noise generated during excavation, grading, and building construction would be potentially significant under both the proposed project and Alternative 2. Although mitigation 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, this impact is considered significant and unavoidable for both Alternative 2 and the proposed project.

Alternative 2 may also result in a reduction in vehicular trips generated throughout the City compared to the proposed project due to the reduction in development potential under this alternative. Therefore, Alternative 2 may result in lower mobile-source noise levels as compared to the proposed project. However, similar to the proposed project, mobile source noise would remain less than significant.

Overall impacts related to noise for Alternative 2 are considered to be slightly less than those associated with the proposed project because there would be incrementally less development constructed under Alternative 2.

5.6.2.6 Population and Housing

Unlike the proposed project, Alternative 2 would have a significant impact on population and housing. Alternative 2 would reduce the square footage of potential development throughout the City as compared to the proposed project. This would result in less residential development, while population growth would continue to occur as projected in SCAG's 2016–2040 RTP/SCS. As such, Alternative 2 would likely continue to result in issues related to overcrowding throughout the City.

Non-residential development would also be reduced under Alternative 2 and the employment opportunities associated with those uses would be eliminated because development would occur at a lower intensity and scale than the proposed project. As such, Alternative 2 would result in a lower jobs-to-housing ratio than the proposed project.

In total, Alternative 2 would result in 7,131 fewer residential units in 2040 as compared to the proposed project. As such, Alternative 2 would provide for fewer housing units than needed to address existing housing needs related to affordability and overcrowding (28,524 units in total are needed to address current overcrowding and RHNA requirements, and an undetermined amount would be required to address future conditions). Alternative 2 would also be inconsistent with the City's objective to comply with State-mandated affordable housing options, as Alternative 2 would likely not facilitate the same number of residential units as the proposed project. Population growth is anticipated to occur whether or not additional housing is constructed, so this alternative would not meet the City's current or future housing needs.

Moreover, failure to comply with the RHNA mandate is enforceable through the Housing Accountability Act and could result in a loss of funding to the City, consistent with State law and recent actions by the State aimed at holding cities accountable to meeting their RHNA requirements. Therefore, impacts related to population and housing would be significantly worse under Alternative 2 as compared to the proposed project, resulting in a determination of significant and adverse for this alternative.

5.6.2.7 Public Services

Similar to the proposed project, Alternative 2 would have a less than significant impact on public services. Public services include fire protection, police protection, public schools, and public libraries. Because the amount of development would be reduced under Alternative 2, the demands for public services would also be incrementally reduced compared to the proposed project.

However, similar to existing conditions of overcrowding, it is likely that population growth would still occur even without construction of adequate housing. Increased population without construction of adequate new housing units would strain police, fire, school, and library resources, as development impact fees would not be collected. This overcrowded condition could result in greater impacts on police, fire, school, and library resources as compared to the proposed project. However, impacts would remain less than significant under both scenarios.

5.6.2.8 Transportation

Alternative 2 would generate fewer trips than the proposed project due to the reduction in development potential, which would incrementally decrease the number of intersections anticipated to operate in excess of the currently established level of service criteria. However, due to the scale of development allowed under Alternative 2 and existing congestion at intersections located within the study area, Alternative 2 would still result in significant unavoidable impacts to intersections within the study area, similar to the proposed project.

Alternative 2 may also result in a reduced off-peak hour VMT due to the anticipated increase in shared discretionary trips associated with overcrowded units under this alternative. However, peak-hour trips are anticipated to increase due to the reduced land use efficiency associated with the reduction in development potential and construction of fewer units in transit rich areas under this alternative. Therefore, Alternative 2 would not meet the State's goals of reducing VMT to the same extent as the proposed project.

Overall, impacts related to transportation under Alternative 2 would be similar to the proposed project, although impacts would remain significant and adverse under both scenarios.

5.6.2.9 Utilities

Similar to the proposed project, Alternative 2 would have a less than significant impact on utilities. Utilities include solid waste, public transportation, water, and wastewater. Because the amount of development would be reduced under Alternative 2, the demands for utilities would be reduced compared to the proposed project. Overall, impacts related to utilities under Alternative 2 are considered incrementally less than under the proposed project. Impacts would remain less than significant under both scenarios.

5.6.2.10 Energy

Similar to the proposed project, Alternative 2 would have a less than significant impact on energy resources. Energy demand associated with Alternative 2 would primarily include electricity, natural gas, and gasoline required to power vehicular trips and new development allowed under Alternative 2. Because the amount of development would be reduced s under Alternative 2, the demands for energy would be reduced compared to the proposed project. Overall, impacts related to energy under Alternative 2 are considered incrementally less than under the proposed project. Impacts would remain less than significant under both scenarios.

5.6.3 Overview of Potential Impacts/Comparison to Proposed Project

Similar to the proposed project, Alternative 2 would result in significant unavoidable impacts related to air quality, GHG emissions, noise, and transportation. Although the decreased efficiency of development intensity near transit in Alternative 2 could lead to more significant impacts related to some air quality, GHG, and transportation sub-sectors, due to the reduction in development potential under Alternative 2, overall impacts would be less than with the proposed project.

Although overall environmental impacts would be reduced under Alternative 2, this alternative would not facilitate the same number of residential units (28,524) as anticipated under the proposed project that are required to alleviate existing issues related to affordability and overcrowding and could potentially exacerbate such conditions through 2040. As such, Alternative 2 would not allow the City to comply with State-mandated affordable housing requirements established during the RHNA process and the shortages identified in the AFH to the same extent as the proposed project. Moreover, failure to comply with the RHNA mandate is enforceable through the Housing Accountability Act and could result in a loss of funding to the City and legal action by the State, as evidenced by the State's recent actions elsewhere in Southern California. Therefore,

impacts to population and housing would be increased, and considered significant and adverse under this alternative.

5.6.4 Attainment of Project Objectives

Similar to the proposed project, Alternative 2 would implement 14 new PlaceTypes and design standards included in the LUE and UDE. However, this alternative would not achieve the Project Objectives to the same extent as the proposed project due to land use reductions throughout the City, particularly those focused near transit.

Alternative 2 would promote livability, environmental quality, community health and safety, the quality of the built environment, and economic vitality (Project Objective 1) through implementation of the LUE and UDE. While Alternative 2 would include many of the features of the proposed project, this alternative's consistency with the overall LUE goals of creating compact new development (Project Objective 4), job growth (Project Objective 5), and land use changes that coincide with the regional economy (Project Objective 6) would be achieved at a lesser extent due to the reduction in development potential under this alternative.

Alternative 2 would, however, include PlaceTypes that encourage sustainable development practices comprised of placemaking principles and design standards to create walkable and complete neighborhoods (Project Objectives 4, 12, 13, 14, 16, and 17). This alternative would achieve some of the Project Objectives related to the provision of diverse housing types (although less diverse housing type options may be provided under this alternative as fewer projects would be built), and would preserve existing neighborhoods (Project Objectives 7 and 8); however, Alternative 2 would not meet Project Objective 2 related to meeting housing needs identified during the RHNA process (7,048 new dwelling units by the year 2021) and the AFH (21,476 housing units to address existing housing needs).

The Open Space PlaceType under Alternative 2 would ensure access to natural and urban open spaces, as well their maintenance, restoration, and preservation (Project Objectives 11, 12, and 15). Similar to the proposed project, the 14 PlaceTypes would be distributed across the planning areas to ensure planning decisions are equitable and City investments are distributed in a manner that serves both new and existing developments in the City (Project Objectives 9 and 10). This alternative would meet many of the Project Objectives, but not as many or to the same degree as the proposed project.

5.7 IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an Environmentally Superior Alternative. *State CEQA Guidelines* Section 15126.6(e)(2) states that if the No Project Alternative is the Environmentally Superior Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other alternatives. Table 5.B provides, in summary format, a comparison of the level of impacts for each alternative to the proposed project.

The No Project/No Build Alternative has the least impact to the environment because it would not introduce PlaceTypes or urban design standards with the potential to increase land use intensities

and/or building heights in the City. While the No Project Alternative would lessen or avoid the impacts of the proposed project, the beneficial impacts of the proposed project—including implementing sustainable planning and development, creating job growth, accommodation of strategic growth near transit, and the provision of housing units required to meet State-mandated affordable housing targets and alleviate overcrowding—would not occur, and none of the Project Objectives would be met.

Table 5.B: Comparison of the Environmental Impacts of the Proposed Project to the Project Alternatives

Environmental Topic	Proposed Project Level of Impact After Mitigation	Alternative 1: No Project/No Development Alternative	Alternative 2: Reduced Project Alternative
Aesthetics	Less Than Significant	Similar	Similar
Air Quality	Significant and Unavoidable	Similar -	Similar
Greenhouse Gas Emissions	Significant and Unavoidable	Fewer	Similar +
Land Use	Less Than Significant	Fewer	Similar
Noise	Significant and Unavoidable	Greater	Similar -
Population and Housing	Less Than Significant	Greater	Greater
Public Services	Less Than Significant	Similar +	Similar +
Transportation	Significant and Unavoidable	Similar -	Similar
Utilities	Less Than Significant	Similar -	Similar -
Energy	Less Than Significant	Similar -	Similar -
Attainment of Project Objectives	Meets all of the Project Objectives	Meets none of the Project Objectives	Meets some of the Project Objectives but not all, and not to the same degree as the proposed project

Source: LSA (May 2019).
Legend:
Greater = Greater impacts than the proposed project
Fewer = Fewer impacts than the proposed project
Similar = Similar impacts as the proposed project
Similar - = Similar, although incrementally fewer impacts as compared to the proposed project
Similar + = Similar, although incrementally greater impacts as compared to the proposed project
VMT = vehicle miles traveled

With the exception of the No Project Alternative, the Environmentally Superior Alternative would be Alternative 2, Reduced Project Alternative. Overall, this alternative would lessen significant environmental impacts or result in impacts similar to those associated with the proposed project. Alternative 2 would achieve some of the Project Objectives; specifically, it would directly encourage development near existing and/or proposed transit (although to a lesser degree than the proposed project) with the direct intent to create compact development patterns and walkable neighborhoods, consistent with Project Objectives 3, 14, 16, and 17. However, this alternative would not increase livability, economic vitality, or health throughout the planning area to the same extent as the proposed project as it would reduce the allowable building potential by 25 percent, thereby reducing employment opportunities and opportunities for mixed-use developments that would promote livability. Moreover, because Alternative 2 would reduce development potential as

compared to the proposed project, this alternative's consistency with the overall LUE goals (Project Objective 3), job growth (Project Objective 5), and land use changes that coincide with the regional economy (Project Objective 6) would not be achieved to the same degree as the proposed project. In addition, the reduction in air quality, GHG, noise, and traffic impacts would be minimal in comparison to the economic value of providing housing and employment opportunities throughout the City. Air quality, GHG, noise, and transportation impacts would be reduced but would remain significant and unavoidable under Alternative 2.

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6.0 LONG-TERM IMPLICATIONS OF THE PROJECT

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines (*State CEQA Guidelines*) requires that all phases of a project must be considered when evaluating its impact on the environment, including: planning, acquisition, development, and operation. An Environmental Impact Report (EIR) must include the following as part of its analysis, as addressed in this chapter:

1. Significant irreversible environmental changes that would result from implementation of the proposed project (Section 6.2);

2. Significant environmental effects that cannot be avoided if the proposed project is implemented (Section 6.3); and

3. Growth-inducing impacts resulting from implementation of the proposed project (Section 6.4).

Additionally, this chapter will discuss the long-term implications associated with the implementation of the proposed project (addressed in Section 6.1) and the environmental effects not found to be significant (addressed in Section 6.6).

6.1 LONG-TERM IMPLICATIONS

Implementation of the proposed project would create potential long-term environmental consequences associated with a transition in land use from vacant and underutilized parcels to land uses envisioned as part of the PlaceTypes identified in the proposed Land Use Element (LUE). Long-term physical consequences of development typically include increased traffic volumes, air quality and greenhouse gas (GHG) impacts, and increased energy and natural resource consumption. Following approval of the proposed project, future individual development projects requiring discretionary actions would be subject to additional environmental review and would be permitted on a project-specific basis as they are proposed. Therefore, the use of this programmatic Recirculated Draft EIR provides an occasion for a more exhaustive consideration of long-term impacts associated with future projects facilitated by approval of the proposed LUE and Urban Design Element (UDE) project.

6.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2 (d) of the *State CEQA Guidelines* requires that an EIR consider and discuss significant irreversible changes that would be caused by implementation of the proposed City of Long Beach (City) General Plan Land Use and Urban Design Elements project (proposed project). Specifically, Section 15126.2 (d) states:

> "Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the

> project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."

Generally, a project would result in significant irreversible environmental changes if the proposed consumption of resources is not justified, if the project would involve a large commitment of nonrenewable resources, or if the project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

Approval of the proposed LUE and UDE is considered a planning/policy action that would help to shape land use patterns and growth in the City through 2040. Therefore, the proposed project does not, in itself, result in any direct physical development. As described in Chapter 3.0, Project Description, one overarching strategy of the LUE is to create, restore, and preserve more open space. In addition, because the existing planning area is largely built out, future development under the proposed project would likely occur as infill development.[1] In the event that a future project under the LUE/UDE is proposed on undeveloped land, after the structural lifespan of the building is reached, it is improbable that the project site would revert to its undeveloped nature. Once implemented, the proposed project would allow for the characteristics of land in the planning area to result in an irreversible commitment of land.

Construction of future development facilitated by the proposed project would result in a commitment of limited, slowly renewable, and nonrenewable resources. Such resources may include certain types of lumber and other forest products; raw materials such as steel; aggregate materials used in concrete and asphalt such as sand and stone; water; petrochemical construction materials such as plastic; and petroleum-based construction materials. In addition, fossil fuels used by construction equipment would also be consumed. Future project construction would also result in an increased commitment of public maintenance services such as waste disposal and treatment. However, the amount and rate of consumption of these resources used during construction would not result in an inefficient or wasteful use, and would be limited in scope.

Similarly, operation of future development facilitated by the proposed project would result in the commitment of limited, nonrenewable resources and slowly renewable resources such as natural gas, electricity, petroleum-based fuels, fossil fuels, and water. Natural gas and electricity would be used for lighting, heating, and cooling of the buildings and operation of the future facilities. As discussed in Section 4.10, Energy, the projected electricity and natural gas demands are within the existing delivery capacity of current service providers, and the proposed project would not result in a significant adverse impact related to the provision of electricity or natural gas. In addition, Title 24 of the California Code of Regulations (CCR) requires conservation practices that would limit the amount of energy (California Energy Code Building Energy Efficiency Standards [Title 24, Part 6]) consumed by the proposed project. With the development of more cost-effective and accessible technologies, dependence on nonrenewable resources used in association with the future development envisioned under the proposed project may also be reduced. Furthermore, all future projects requiring discretionary actions under the proposed project would be required to undergo

[1] It is important to note that most of the City is built out, with only 585 parcels currently vacant, for a total of 212.5 acres of vacant land spread across 585 parcels.

project-specific analysis (as required by CEQA) and comply with all California Green Building Standards Code (CALGreen Code) building efficiency standards (Title 24, Part 11) and mandatory residential and non-residential building requirements in the California Energy Code Building Energy Efficiency Standards (Title 24, Part 6) (as required by State law). Additionally, resources that would be used during the operation of future development projects would be similar to those currently consumed within the City. Nevertheless, the use of such resources would continue to represent a long-term commitment of essentially nonrenewable or slowly renewable resources.

Implementation of the proposed project would also result in future development that would result in an increased demand for potable water and generation of wastewater. However, as stated within Section 4.9, Utilities, future projects requiring discretionary actions would be subject to additional environmental review and would be assessed on a project-by-project basis to determine the demand on existing infrastructure. Furthermore, improved and/or new water and wastewater facilities required to support growth projections anticipated by the Southern California Association of Governments' (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) would be constructed in accordance with the demand for the new service.

In sum, future development facilitated by the proposed project could result in the depletion of nonrenewable resources. However, each future project requiring a discretionary action within the planning area would be evaluated individually, and project-specific mitigation would be mandated as needed. The commitment of limited, slowly renewable, and nonrenewable resources required for construction and operation of future development facilitated by the proposed project would limit the availability of these resources for future generations or for other uses during the life of the project. However, the use of such resources for future development would support infill growth, which in turn would support a more efficient use of non-renewable resources and would be consistent with regional and local plans, projected growth in the area, and State goals to provide housing. Therefore, although irreversible changes may result from implementation of the proposed project, such changes would not be considered significant.

6.3 SIGNIFICANT AND UNAVOIDABLE IMPACTS

As determined in the contents of this Recirculated Draft EIR, implementation of the proposed project would result in significant and unavoidable adverse impacts related to air quality, global climate change, and transportation. With implementation of mitigation measures for air quality and GHG impacts, the potential impacts identified in this Recirculated Draft EIR would remain significant and unavoidable. Due to the absence of feasible mitigation for the adverse traffic impacts under the anticipated General Plan build out scenario at 48 of the 120 study area intersections, transportation impacts identified in this Recirculated Draft EIR remain significant and unavoidable. In addition, potentially significant and unavoidable traffic impacts were identified at California Department of Transportation (Caltrans) freeway facilities. These impacts are further discussed in Chapter 8.0, Significant Unavoidable Adverse Impacts, in this Recirculated Draft EIR.

6.4 GROWTH-INDUCING IMPACTS

Sections 15126(d) and 15126.2(e) of the *State CEQA Guidelines* require that an EIR analyze growth-inducing impacts and state that an EIR should discuss the ways in which the proposed project could

foster economic or population growth or construction of additional housing, either directly or indirectly, in the surrounding environment. Growth can be induced in various ways, such as the removal of obstacles to growth (e.g., removal of development moratoriums[1] and streamlined environmental review processes), the increased economic activity in an area, and the establishment of policies or other measures that would aid in fostering additional growth. Although the inducement of growth is not considered a direct environmental effect, an assessment of growth inducement is required.

Generally, a project may lead to spatial, economic, or population growth if it meets one of the following criteria: elimination of an impediment to growth (e.g., establishment of new infrastructure or new access to an area, removal of development moratoriums); economic expansion or growth (e.g., increases in the number of employment opportunities), indirect or direct increases in population growth (e.g., construction of additional housing), enactment of a precedent-setting action (e.g., changes in general plan or zoning approvals), or development of open space areas (e.g., separate and distinct from development within infill areas).

A project that meets any one of the above-listed criteria may be considered a growth-inducing project. The potential growth-inducing impacts associated with the proposed project are evaluated below, based on these criteria (Sections 6.5.1 through 6.5.5). It should be noted that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment (*State CEQA Guidelines*, Section 15126.2(d)). This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment beyond the direct consequences of implementing the proposed project as described in earlier sections of this Recirculated Draft EIR.

6.5 IMPACTS OF INDUCED GROWTH

6.5.1 Removal of Impediments to Growth and Development of Open Space Areas

The planning area encompasses the entirety of the City and is representative of a fully built-out urban area containing a mix of land uses. The proposed project is a planning tool that would change existing regulations pertaining to land development through the approval of both the General Plan LUE and the UDE, and would replace the existing LUE and the Scenic Routes Element (SRE). These changes would affect both the classification of land within the City and the design of development and infrastructure throughout the City. The proposed 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 UDE would be an entirely new element in the City's General Plan and would replace the existing SRE.

As discussed in this Recirculated Draft EIR, the proposed project is intended to address growth that is already projected to occur, and to alleviate the existing overcrowded housing conditions. The proposed project does not include any physical improvements, but would establish new PlaceTypes

[1] Development moratoriums can be enacted by local agencies to temporarily limit growth while the effects of growth are analyzed. These moratoriums are used in an effort to promote valid public purposes and are limited in duration.

to accommodate the projected increase in population and employment in the City, and in order to alleviate overcrowding, as documented in the City's Assessment of Fair Housing report. The proposed project would accommodate projected growth and housing needs established in the City's General Plan 2013–2021 Housing Element and the SCAG 2016–2040 RTP/SCS.

The proposed changes to land development regulations would not allow for unrestricted growth; rather, the proposed LUE and UDE would provide greater flexibility and a mix of compatible land uses, focus opportunities for new development in approximately 13 percent of the City within eight identified Major Areas of Change, and outline an urban framework that addresses the varying aesthetic characteristics of the City.

Due to the developed and urban context of the proposed project, implementation of the project would generally be accommodated by existing infrastructure. All future projects requiring a discretionary action would be analyzed on a project-specific basis to determine the demand and capacity for existing infrastructure to serve each specific project.

Because Long Beach is a built-out city that is surrounded by other built-out communities, continued growth in the City would not remove obstacles to growth beyond its borders or within large undeveloped open space areas. Moreover, one of the overarching goals of the proposed LUE is to create, restore, and protect open space, which would serve to restrict development within areas currently occupied by open space or planned for open space uses in the future. As opposed to inducing growth, the project strategically accommodates SCAG projected population growth to be focused along commercial corridors and transit-rich, built-out areas. Therefore, the proposed project would not be considered to be a growth-inducing project, even with the increased demand and changes to land use regulations associated with the proposed project.

6.5.2 Indirect or Direct Increases in Population Growth

Section 4.6, Population and Housing, addresses the potential growth-inducing impacts associated with the adoption and implementation of the proposed project. As discussed within Section 4.6, the proposed project does not induce growth, but rather is intended to guide growth and development in the planning area. Specifically, the proposed project aims to accommodate the growth already projected for the planning area as identified in the 2016–2040 RTP/SCS. The proposed project aims to provide a framework for strategically and sustainably focusing infill development to accommodate projected growth for the planning area through the year 2040.

Implementation of the proposed project would accommodate, but not induce, population, employment, and housing growth within the City by creating areas of focused change and would provide opportunities for increased density and intensity. The anticipated General Plan build out scenario (2040) would accommodate a projected population increase of up to 18,230 people.

Although the proposed project would accommodate socioeconomic growth projections for the City through the year 2040, the proposed project also aims to alleviate existing issues in the planning area related to a lack of affordable housing and overcrowding. As previously stated and as described further in Section 4.6, Population and Housing, the anticipated General Plan build out scenario (2040) would facilitate the future development of approximately 28,524 new housing units

throughout the planning area. Development of these housing units would not result in a corresponding increase in population, as 21,476 units are needed to accommodate large households and alleviate existing overcrowding as documented in the City's Assessment of Fair Housing report. Approval of the proposed project would also further the City's objective by allowing for the construction of sufficient new housing units equal to or in excess of the City's Regional Housing Needs Assessment (RHNA) requirement for the 2013–2021 Housing Element (i.e., a total of 7,048 units). As such, the project-related increase in housing units would not result in a direct increase in population growth in the City, as the majority of new housing units would serve to alleviate overcrowding and provide additional opportunities for affordable housing within the planning area.

The opportunities for housing development and population growth accommodated by the proposed project would be consistent with the SCAG growth projections for the City as identified in the 2016–2040 RTP/SCS. Similarly, the project would accommodate an increase in 28,511 jobs within the planning area by 2040, as projected in the 2016–2040 RTP/SCS. In order to accommodate employment growth, the project would allow for mixed uses within several of the proposed PlaceTypes and would encourage the enhancement of commercial centers throughout the City. New employment opportunities accommodated by the proposed project seek to improve the City's current jobs-to-housing imbalance by providing jobs to local residents.

In summary, the proposed project would accommodate projected growth and promote sustainable infill development patterns in an effort to accommodate population, employment, and housing growth projections identified for the City in SCAG's 2016–2040 RTP/SCS. Therefore, implementation of the proposed project would constitute a less than significant impact in related to induced growth.

6.5.3 Expansion of Public Services

As discussed in Section 4.7, Public Services, the planning area is currently served by all public service providers, including police protection services, fire prevention services, public schools, public libraries, telecommunications, electricity, and natural gas. The proposed project does not include any physical improvements, but would accommodate growth projected for the City through 2040 in the 2016–2040 RTP/SCS. The projected growth within the planning area through 2040 would create an increased demand for public services within the City. All future projects requiring a discretionary action would be required to undergo project-specific environmental review to determine project-specific impacts on public services and would be required to pay applicable police, fire, and school impact fees in effect at the time such future development applications are submitted. City staff would continue to review site plans for future projects to ensure the adequate provision of public services. In addition, as is currently standard practice in the City, new public service facilities required to support projected growth would be constructed in accordance with the demand for the new service.

6.5.4 Encouragement/Facilitation of Economic Effects

During construction of future development projects, a number of temporary design, engineering, and construction-related jobs would be created, increasing economic activity. This would be a direct economic effect of this project that could significantly affect the environment. Because the

proposed project is a programmatic planning and policy action, the impacts from this effect would be analyzed and any appropriate mitigation imposed on a project-by-project basis.

The proposed project would accommodate the projected increases in population, employment, and housing in the City through the year 2040. Growth associated with the anticipated General Plan build out scenario (2040) would be consistent with SCAG's regional growth forecasts for each of these topic areas for the same horizon year (2040), with the exception of housing, which would result in more housing units under the proposed project in order to alleviate existing overcrowding conditions. The population and employment growth would facilitate economic goods and services that could result in the creation of new businesses and/or the expansion of existing businesses within the planning area to address these economic needs. In addition, new commercial and office uses developed in accordance with the proposed PlaceTypes would likely generate employment opportunities that would accommodate employment growth projections for the City, as outlined in the 2016–2040 RTP/SCS. Many of the project objectives of the proposed LUE and UDE are to enhance economic vitality and create job growth allowing for new businesses in in the City. Actual economic growth will depend on future market demand, site constraints, and the willingness of individual property owners. Therefore, the proposed project would have both direct and indirect economic effects that could significantly affect the environment. Because the proposed project is a programmatic policy document, the impacts from this effect would be analyzed and any appropriate mitigation imposed on a project-by-project basis.

6.5.5 Precedent-Setting Action

As previously stated, the project proposes to replace the City's existing 1989 LUE with the proposed LUE and adopt the UDE as an entirely new element of the City's General Plan. The proposed project is a comprehensive planning tool that would define future land use and design throughout the City. The proposed project represents the implementation of both the LUE and UDE, which would establish PlaceTypes, urban design guidelines, goals, and policies for the planning area. The proposed change from segregated land use designations to PlaceType classifications would apply to all parcels throughout the City. Major land use changes proposed as part of the LUE are identified as Major Areas of Change, which include the introduction of a new PlaceType category, increased density, or transit-oriented uses (see Chapter 3.0, Project Description, of this Recirculated Draft EIR). These changes to the land use definitions of the City would encourage increased density in strategic locations in order to accommodate future growth already projected for the planning area through horizon year 2040. Although adoption of the proposed LUE and UDE would set a precedent in how the City approaches land use and urban design, the project would not result in a precedent-setting action that would alter growth projections or adversely affect the environment. Specifically, goals and policies in both the LUE and UDE elements encourage greater flexibility in land uses to allow for mixed-use, infill, and transit-oriented development to focus growth in specific areas of the City and along existing transit corridors. These policies would serve to reduce air quality and GHG emissions by promoting mixed-use development and concentrating future development in areas served by transit options, thereby reducing vehicle miles traveled (VMT). Therefore, the project would be beneficial to the City and region and would not represent an adverse growth-inducing impact. Moreover, adoption of the proposed LUE and UDE would be consistent with California Government

Code Sections 65300 et seq., which requires cities and counties in the State of California to periodically update their general plans.

In Chapter 3.0, Project Description, Table 3.B, Anticipated General Plan Build-Out Summary, estimates the future housing unit and non-residential square footage based on the anticipated build-out projections of the proposed LUE. Projections are based on the anticipated build-out capacity of PlaceTypes. As shown in Table 3.B, the anticipated General Plan build out scenario (2040) is projected to accommodate approximately 484,485 residents, 192,318 housing units, and 181,665 employees. As previously stated, population and employment growth projections accommodated by the proposed project have been accounted for in SCAG's 2016–2040 RTP/SCS growth projections for the City, with the exception of housing units, which would be greater under the proposed project than projected in the 2016–2040 RTP/SCS. The increase in housing units is attributed to the need for additional housing needed to alleviate existing overcrowding and provide additional housing options in the City. As discussed throughout this Recirculated Draft EIR, implementation of the LUE and UDE would result in significant and unavoidable adverse impacts related to air quality, global climate change, and transportation. However, existing land uses in Long Beach generate citywide impacts related to these three topic areas under existing conditions. Furthermore, the State of California has set goals to increase housing supply to improve affordability and reduce overcrowding, as well as reduce GHG emissions by reducing VMTs. The City believes that the proposed General Plan LUE and UDE project directly addresses the State's requirement to increase housing supply and reduce GHG emissions by promoting compact infill development near transit alternatives. Therefore, the City will be required to balance the significant unavoidable impacts associated with the project against the need to provide additional housing and accommodate projected growth within the planning area.

The City is almost entirely built out, and future development would most likely occur as infill projects. The proposed project does not include any physical improvements, and subsequent development proposals subject to discretionary review would require individual environmental analysis and associated mitigation to ensure that such subsequent impacts would not significantly affect the environment.

For the reasons stated above, the proposed project would have less than significant growth inducing impacts, and no mitigation is required.

7.0 MITIGATION MONITORING AND REPORTING PROGRAM

7.1 MITIGATION MONITORING REQUIREMENTS

Public Resources Code (PRC) Section 21081.6 (enacted by the passage of Assembly Bill 3180) mandates that the following requirements shall apply to all reporting or mitigation monitoring programs:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes that have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.

- The lead agency shall specify the location and custodian of the documents or other materials that constitute the record of proceedings upon which its decision is based.

- A public agency shall provide measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents that address required mitigation measures or, in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.

- Prior to the close of the public review period for a Draft Environmental Impact Report (EIR), a responsible agency, or a public agency having jurisdiction over natural resources affected by the project, shall either (1) submit to the lead agency complete and detailed performance objectives for mitigation measures that would address the significant effects on the environment identified by the responsible agency or agency having jurisdiction over natural resources affected by the project, or (2) refer the lead agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a lead agency by a responsible agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures that mitigate impacts to resources that are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance with that requirement by a responsible agency or agency having jurisdiction over natural resources affected by a project shall not limit the authority of the responsible agency or agency having jurisdiction over natural resources affected by a project, or the authority of the lead agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

7.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program has been prepared in compliance with PRC Section 21081.6. It describes the requirements and procedures to be followed by the City of Long Beach (City) to ensure that all mitigation measures adopted as part of the proposed Long Beach General Plan Land

Use and Urban Design Elements (LUE/UDE) Project (proposed project) will be carried out as described in this Recirculated Draft EIR.

Table 7.A lists each of the mitigation measures specified in this Recirculated Draft EIR and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party/ Approving Agency	Timing for Mitigation Measure
4.1: Aesthetics			
The proposed project would not result in any significant adverse impacts related to aesthetics. No mitigation is required.			
4.2: Air Quality			
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 Director of the City of Long Beach (City) Department of Development Services, or designee, 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, the following: • Require the following fugitive-dust control measures: o Use nontoxic soil stabilizers to reduce wind erosion. o Apply water every 4 hours to active soil-disturbing activities. o 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.	City of Long Beach Department of Development Services Planning Bureau, or designee	Prior to issuance of any construction permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure
	• 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. (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.) • Suspend all soil disturbance activities when winds exceed 25 miles per hour (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 the California Air Resources Board's (CARB) 2010 engine emission standards at 0.01 grams per brake horsepower-hour (g/bhp-hr) of particulate (PM) and 0.20 g/bhp-hr of nitrogen oxides (NO_X) 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 shall make the records available for inspection.		
MM AQ-2	Prior to future discretionary project approval, development project applicants shall prepare and submit to the Director of the City Department of Development	City of Long Beach Department of	Prior to future discretionary project

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure
Services, or designee, 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. Below are 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 CARB Rule 2845 (13 California Code of Regulations [CCR] Chapter 10, Section 2485). • Require that 240-volt electrical outlets or Level 2 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.	Development Services Planning Bureau, or designee	approval/Prior to issuance of a Certificate of Occupancy

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure
	• 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.		
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.	City of Long Beach Department of Development Services Planning Bureau, or designee	Prior to future discretionary approval for projects that require environmental evaluation under CEQA
4.3: Greenhouse Gas Emissions			
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	Director of the City of Long Beach	Within approximately 36 months of adoption

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party/ Approving Agency	Timing for Mitigation Measure
	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 a CAAP to the City Council for adoption. 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, which 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.	Department of Development Services, or designee	of the proposed General Plan Land Use Element (LUE)/Urban Design Element (UDE) project/Creation of inventory every 5 years upon adoption of the initial CAAP
4.4: Land Use and Planning			
The proposed project would not result in any significant adverse impacts related to land use and planning. No mitigation is required.			
4.5: Noise			
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.	Director of the City of Long Beach Department of Development Services, or designee	During construction activities.

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure
• 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 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.		
4.6: Population and Housing		
The proposed project would not result in any significant adverse impacts related to population and housing. No mitigation is required.		
4.7: Public Services		
The proposed project would not result in any significant adverse impacts related to public services. No mitigation is required.		

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party/ Approving Agency	Timing for Mitigation Measure
4.8: Transportation/Traffic			
MM T-1	Prior to approval of any discretionary 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	City of Long Beach Traffic Engineer	Prior to approval of any project that is forecast to generate 100 or more peak-hour trips

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure
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.		
4.9: Utilities		
The proposed project would not result in any significant adverse impacts related to utilities. No mitigation is required.		
4.10: Energy		
The proposed project would not result in any significant adverse impacts related to energy. No mitigation is required.		

8.0 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

8.1 INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines (*State CEQA Guidelines*) Section 15126.2(c) requires that an Environmental Impact Report (EIR) describe significant adverse environmental impacts of a proposed project that cannot be avoided, including those effects that can be mitigated but not reduced to below a level of significance. The Executive Summary of this EIR contains a detailed summary table that identifies the potentially significant adverse impacts of the City of Long Beach (City) General Plan Land Use and Urban Design Elements (LUE/UDE) Project (proposed project); project design features, standard conditions, and mitigation measures applicable to the proposed project; and the level of significance of each impact after mitigation. These impacts are also described in detail in Chapter 4.0, Environmental Setting, Impacts, and Mitigation Measures, and throughout Sections 4.1 through 4.10 of this Recirculated Draft EIR.

As described in detail in Sections 4.1 through 4.10 of this Recirculated Draft EIR, the proposed project would not result in significant unavoidable adverse impacts related to aesthetics, land use and planning, noise, population and housing, public services, utilities and service systems, and energy. Therefore, the project impacts related to these issues are not discussed further in this section.

As described in detail in Chapter 4.0 and summarized briefly below, the proposed project would result in significant, unavoidable adverse impacts after mitigation related to air quality, global climate change, and transportation.

8.2 SIGNIFICANT UNAVOIDABLE ADVERSE PROJECT IMPACTS

8.2.1 Air Quality

The proposed project would have significant unavoidable impacts related to the violation of applicable air quality standards, the exposure of sensitive receptors to substantial pollutant concentrations, and consistency with an applicable air quality plan. Construction and operational activities associated with future development occurring under the proposed project would be significant and unavoidable because the scale of such activities is not known and project-specific emissions cannot be estimated. Compliance Measure CM AQ-1 requires future projects to comply with South Coast Air Quality Management District (SCAQMD) rules and Best Management Practices to reduce air pollutant emissions during the construction of future projects facilitated by approval of the proposed project. In addition, Mitigation Measures MM AQ-1, AQ-2, and AQ-3 require the preparation of project-specific technical assessments evaluating potential construction and operational-related air quality impacts to ensure that criteria pollutant emissions and emissions of toxic air contaminants (TACs) are reduced to the maximum extent feasible. However, in an abundance of caution, the potential emissions impact associated with the operation of the proposed project would remain significant and unavoidable even with implementation of Mitigation Measures MM AQ-1, AQ-2, and AQ-3. The project would also result in significant unavoidable impacts related to conflicts with an air quality management plan because project-related air emissions in excess of SCAQMD thresholds may result in an increase in the frequency and/or severity of existing air quality

violations, cause or contribute to new violations, or delay the attainment of emissions reductions in the AQMP.

8.2.2 Global Climate Change

The proposed project would have significant unavoidable impacts related to the generation of greenhouse gas (GHG) emissions that could significantly impact the environment. Implementation of the proposed project would contribute to Global Climate Change (GCC) through direct and indirect emissions of GHGs from land uses within the City of Long Beach. On a service population basis, the anticipated General Plan build out scenario (2040) would reduce the GHG emissions from 3.8 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per service population (MT of CO_2e/yr/SP) under existing conditions down to 2.5 MT CO_2e/yr/SP (with reduction measures incorporated). 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 in their draft City Climate Action and Adaptation Plan (CAAP) GHG Emissions Reduction Target Options Memo (2018) and used for purposes of this environmental evaluation. As such, Mitigation Measure MM GHG-1 would be required to reduce GHG emissions. This measure requires the preparation of a GHG Reduction Plan or Climate Action and Adaptation Plan (CAAP) to ensure that future development projects meet or exceed the statewide goals aimed at the reduction of GHG emissions. In addition to the proposed mitigation measure, additional statewide measures would be necessary to reduce GHG emissions from development that may occur with adoption of the proposed project to meet the long-term GHG reduction goals. Although the implementation of the proposed project would result in lower GHG emissions within the City as compared to existing conditions, because the project would generate emissions above the interim threshold level and because no additional statewide measures are currently available that can be implemented, GHG emission impacts under the anticipated General Plan build out scenario (2040) would remain significant and unavoidable.

8.2.3 Noise

The proposed project would result in significant unavoidable construction-related impacts. Construction activities associated with development anticipated under the project would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced. Some projects may have unusual or extremely loud construction activities (e.g., pile driving, nighttime construction work, or 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 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 because the location, the proximity to sensitive receptors, and the types of construction equipment associated with new construction projects are all unknown at this time, construction noise impacts are considered significant and unavoidable.

8.2.4 Transportation

The proposed project would have significant unavoidable impacts related to conflicts with applicable plans, ordinances, and policies, as well as conflicts with an applicable Congestion Management Plan (CMP). The Traffic Impact Analysis (LSA 2019) prepared for the proposed project determined that 48 intersections could be significantly impacted by implementation of future development projects in the anticipated General Plan build out scenario (2040) based on the City's criteria. Potentially significant traffic impacts were also identified at freeway facilities. Physical improvements that would retain the performance goal of level of service (LOS) D were identified as part of the transportation analysis for the project. In addition, the City's Capital Improvement Program, Mobility Element, and/or applicable specific plans were also reviewed for pending and planned vehicle and non-vehicle capacity improvements throughout the City. As such, applicants for future discretionary projects would be required to comply with Mitigation Measure MM T-1. Mitigation Measure MM T-1 requires applicants for future projects to prepare a traffic improvement analysis to identify feasible physical improvements to reduce impacts at intersections within the planning area. While recommended improvements and implementation of Mitigation Measure MM T-1 could contribute to a reduced vehicle LOS, the effectiveness of these improvements cannot be quantified and, therefore, cannot be considered mitigation for the 48 impacted study area intersections for the purposes of CEQA. Therefore, impacts to the 48 intersections are considered significant and unavoidable for the horizon year of 2040.

In addition to identifying significant and unavoidable impacts at the 48 impacted intersections based on the City's criteria, the Traffic Impact Analysis also identified significant impacts at 4 of the 10 monitored intersections within the study area based on Los Angeles County's 2010 CMP criteria. Despite recommended improvements in Mitigation Measure MM T-1, potentially significant impacts to Caltrans intersections and freeway facilities may remain significant and unavoidable. Therefore, the impacts to these intersections are considered significant and unavoidable for the horizon year of 2040.

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9.0 PERSONS CONTACTED

The following organizations and persons were contacted during the preparation of the Recirculated Draft Environmental Impact Report (EIR) for the City of Long Beach General Plan Land Use and Urban Design Elements Project (proposed project):

- **Long Beach Fire Department (LBFD).** Correspondence with Matthew Gruneisen, LBFD Deputy Chief, Fire Prevention, dated October 31, 2018.
- **City of Long Beach Police Department (LBPD).** Correspondence with Rico Fernandez, LBPD Sergeant, dated November 15, 2018.
- **Long Beach Unified School District (LBUSD).** Correspondence with Melanie Nazarbekian, LBUSD Assistant Project Manager, dated November 5, 2018.
- **Long Beach Public Library (LBPL).** Correspondence with Amber Ahlo, LBPL Administrative Officer, dated November 5, 2018.
- **Adriana Raza, Sanitation Districts of Los Angeles (LACSD).** Telephone conversation on October 18, 2018.

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10.0 LIST OF PREPARERS

10.1 CITY OF LONG BEACH

The following individuals from the City of Long Beach were involved in the preparation of the Recirculated Draft Environmental Impact Report (EIR):

- Christopher Koontz, Planning Manager, Development Services Department
- Patricia Diefenderfer, Advance Planning Officer
- Alison Spindler, Planner IV & Budget Specialist, Development Services Department
- Alejandro Sanchez-Lopez, Planner, Development Services Department

10.2 LONG BEACH WATER DEPARTMENT

The following individual from the Long Beach Water Department was involved in the preparation of the Recirculated Draft EIR:

- Mathew Lyons, Director, Planning & Water Conservation

10.3 CONSULTANT TEAM

The following firms were involved in the preparation of the Recirculated Draft EIR and/or technical reports in support of the Recirculated Draft EIR. The nature of their involvement is summarized below.

10.3.1 LSA Associates, Inc.

The following individuals were involved in the preparation of the Recirculated Draft EIR and the Air Quality, Greenhouse Gas Emissions, Noise, and Traffic Analyses:

- Ashley Davis, Principal
- Tony Petros, Principal, Transportation
- Amy Fischer, Principal, Air and Noise
- Arthur Black, Associate, Transportation Planner
- Justin Roos, Associate, Geographic Information Systems Specialist
- Michael Slavick, Senior Air Quality Specialist
- David Atwater, Senior Environmental Planner
- Meredith Canterbury, Senior Geographic Information Systems Specialist
- Alyssa Helper, Senior Environmental Planner
- Daniel Chuong, Transportation Engineer
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- Abby Annicchiarico, Assistant Environmental Planner
- Gary Dow, Associate, Graphics
- Matt Phillips, Graphics Technician

- Lauren Johnson, Technical Editor
- Chantik Virgil, Senior Word Processor

10.3.2 RRM Design Group

The following individuals were involved in the preparation of the proposed Urban Design Element:

- Jami Williams, Principal
- Lance D. Wierschem, Associate Designer

10.3.3 MIG, Inc.

The following individual was involved in the preparation of the proposed Land Use Element:

- Jose M. Rodriguez, Project Manager

10.3.4 PlaceWorks

The following individuals were involved with peer review of the Recirculated Draft EIR and/or technical reports in support of the Recirculated Draft EIR:

- Nicole Morse, Esq., Principal, EIR Peer Review Lead
- Nicole Vermilion, Principal, AQ/GHG Peer Review
- Bob Mantey, Manager, Noise Peer Review

10.3.5 Trifiletti Consulting

The following individual provided strategic counsel related to the proposed project:

- Lisa Trifiletti, Principal

11.0 REFERENCES

The following references were used in the preparation of the Recirculated Draft Environmental Impact Report for the City of Long Beach General Plan Land Use and Urban Design Elements Project (proposed project).

AECOM. 2018. *City of Long Beach Climate Action Adaptation Plan GHG Emissions Reduction Target Options Memorandum*. August.

_____. 2018. *Final Climate Change Vulnerability Assessment Results.*

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 in adults with asthma", *The Journal of Allergy and Clinical Immunology*, 123(3):626–631.

Bike Long Beach. 2015. Website: http://www.bikelongbeach.org/welcome/infrastructure/bikeways (accessed May 3, 2016).

California Air Resources Board (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.

_____. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook). April.

_____. 2007. "ARB approves tripling of early action measures required under AB 32," News Release 07-46. October 25. Website: www.arb.ca.gov/newsrel/nr102507.htm (accessed March 22, 2016).

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

_____. 2008. *Climate Change Proposed Scoping Plan, a Framework for Change*. October.

_____. 2012. *Status of Scoping Plan Recommended Measures*. Website: http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

_____. 2013. Overview of the Children's Health Study. Website: Website: http://www.arb.ca.gov/research/chs/over.htm (accessed December 10, 2013).

_____. 2014. Cap and Trade Program. Website: http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed September 10, 2014, and March 2019).

_____. 2016. Website: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

_____. 2017. *California's 2017 Climate Change Scoping Plan*. November.

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

_____. GHG Inventory Data – 2000 to 2012. Website: http://www.arb.ca.gov/cc/inventory/data/data.htm (accessed January 2015).

California Association of Local Agency Formation Commissions. 2011. *California Cities by Incorporation Date*, last updated March 2011.

California Coastal Commission (CCC). *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone.* Website: http://www.coastal.ca.gov/wetrev/wetch4.html (accessed February 2015, March 2019).

California Department of Education. Long Beach Unified School District. Website: http://www.ed-data.org/district/Los-Angeles/Long-Beach-Unified (accessed February 22, 2016).

California Department of Forestry and Fire Protection (CAL FIRE). 2011. Very High Fire Hazard Severity Zones in Local Responsibility Areas. Los Angeles County. September 2011.

_____. Website: http://frap.fire.ca.gov/ webdata/maps/los_angeles/fhszs_map.19.pdf (accessed October 15, 2018).

California Department of Resources Recycling and Recovery (CalRecycle). AB 939 in the New Millennium. Website: http://www.calrecycle.ca.gov/Archive/21stCentury/Events/FutureMar99/issues1.htm (accessed October 15, 2015).

_____. Solid Waste Information System (SWIS) Facility/Site Listing, Website: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx (accessed May 17, 2016).

_____. Estimated Solid Waste Generation and Disposal Rates Website: http://www.calrecycle.ca.gov/wastechar/wastegenrates/Residential.htm (accessed May 18, 2016).

_____. California Solid Waste Statistics. Website: https://www2.calrecycle.ca.gov/LGCentral/Disposal Reporting (accessed October 3, 2018).

_____. Facility/Site Summary Details: Southeast Resource Recovery Facility (19-AK-0083). Website. http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AK-0083/Detail/ (accessed July 27, 2018

California Department of Tax and Fee Administration. 10-Year Report of Net Taxable Gasoline Gallons. Website: http://www.cdtfa.ca.gov/taxes-and-fees/MVF_10_Year_Report.pdf (accessed March 19, 2019).

California Department of Transportation (Caltrans). 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.

_____. Scenic Highway Mapping System. Website: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/ (accessed September 25, 2018).

California Division of Mines and Geology. 2001. GIS data (accessed June 16, 2015).

California Employment Development Department (EDD). 2018. Monthly Labor Force and Unemployment Rate for Cities and Census Designated Places, Los Angeles County, August 17, 2018, March 2017 Benchmark. Website: https://www.labormarketinfo.edd.ca.gov/geography/losangeles-county.html (accessed on September 4, 2018).

_____. 2019. Monthly Labor Force and Unemployment Rate for Cities and Census Designated Places, Los Angeles County, January 18, 2019, March 2017 Benchmark. Website: https://www.labor marketinfo.edd.ca.gov/geography/losangeles-county.html (accessed on January 31, 2019).

California Energy Commission (CEC). 2017. *2018–2028 Electricity Demand Preliminary Forecast*. Website: http://www.energy. ca.gov/2017_energypolicy/documents/2017-08-03_workshop/2017-07-06_pre_demand_forecst.php, (accessed July 30, 2018).

_____. Renewable Portfolio Standard. Website: https://www.energy. ca.gov/ portfolio/ (accessed March 19, 2019).

_____. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/almanac/naturalgasdata/overview.html (accessed December 17, 2018).

_____. Transportation Energy Demand Forecast 2018-2030. Published on December 4, 2017.

California Environmental Protection Agency (Cal/EPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March 2006.

California Environmental Protection Agency, Los Angeles Regional Water Quality Control Board, Storm Water-Municipal Permits. Website: http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/ (accessed May 20, 2016).

California Ocean Protection Council (OPC). 2017. *Rising Seas in California, an Update on Sea-Level Rise Science*. April.

_____. 2018. *State of California Sea-Level Rise Guidance 2018 Update.* March 2018.

City of Long Beach Auditor's Office. January 29, 2016. Proposition H Police and Fire Public Safety Oil Production Act.

_____. 2017. Proposition H Police and Fire Public Safety Oil Production Act. January 2017.

City of Long Beach. 1973. General Plan. Conservation Element.

_____. 1975. General Plan. Public Safety Element.

_____. 1975. General Plan. Noise Element. March.

_____. 1975. General Plan. Scenic Routes Element.

_____. 1980. Local Coastal Program, July 22.

_____. 1988. General Plan. Seismic Safety Element.

_____. 1989. General Plan. Land Use Element. Last amended in April 1997.

_____. 1996. General Plan. Air Quality Element.

_____. 1996. *Long Beach General Plan*. December.

_____. 2002. General Plan. Open Space and Recreation Element.

_____. 2010. General Plan. Historic Preservation Element.

_____. 2010. *Sustainable City Action Plan*. Adopted February 2, 2010.

_____. 2010. Downtown Plan, Public Review Draft Program Environmental Impact Report, December.

_____. 2013. General Plan. Mobility Element. October.

_____. 2014. General Plan. 2013–2021 Housing Element. Certified April 2014.

_____. 2014. Southeast Area (SEADIP) Specific Plan-FAQs, April 21.

_____. 2015. Fire Department, FY 2015 Proposed Budget Overview.

_____. 2015. Midtown Specific Plan. June.

_____. 2015. Municipal Code. September.

_____. 2015. Municipal Code, Section 8.80.160.

_____. 2016. Developers Fees (effective September 30, 2015). Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2506 (accessed January 14, 2016).

_____. 2016. General Plan. Draft Land Use Element. February.

_____. 2016. General Plan. Draft Urban Design Element. February.

_____. 2017. Bicycle Master Plan. February 2017. Website: http://longbeach.gov/globalassets/pw/media-library/documents/resources/general/bicycle-master-plan/bicycle_master_plan

_____. 2018. *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo.*

_____. 2018. Fiscal Year 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).

_____. 2018. Municipal Code, *Section 21.42.03.* City of Long Beach, codified through Ordinance No. ORD-18-0021, enacted August 14, 2018 (Supp. No. 21, Update 2).

- Noise Ordinance of the City's Municipal Code (2019)
- City of Long Beach. 2019. Municipal Code. February.

_____. 2018. *Police and Fire Public Safety Oil Production Act Fund Summary. FY 19 Proposed Budget*. July.

_____. 2018. Proposed Long Beach General Plan Land Use Element (March 2018)

_____. 2018. Proposed Long Beach General Plan Urban Design Element (March 2018)

_____. 2019. Cable Television and Telephone Service. Website: http://www.longbeach.gov/ti/telecommunications (accessed January 21, 2019).

_____. 2019. Fiscal Year 2019 Adopted Budget-Capital Improvement Program Budget. Website: http://www.longbeach.gov/globalassets/pw/media-library/documents/resources/general/capital-improvement-plan/capital-improvement-plan/fy-19-adopted-cip-book (accessed January 21, 2019).

_____. 2019. Municipal Code. February.

_____. Noise Ordinance of the City's Municipal Code (adopted 1977, most recent revision 2009)

City of Long Beach Fire Department (LBFD). Station Locations. Website: http://www.longbeach.gov/fire/about-us/station-locations/ (accessed September 4, 2018).

Climate Change Science Program (CCSP). 2009. (1 of 784*) Final Report, United States CCSP, Synthesis and Assessment Product 4.1. Coastal Sensitivity to Seal Level Rise: A Focus on the Mid-Atlantic Region.* Lead Agency: US Environmental Protection Agency, Other Key Participating Agencies: US Geological Survey, National Oceanic and Atmospheric Administration. Contributing Agencies: Department of Transportation. January 15, 2009.

County of Los Angeles. 2012. Countywide Integrated Waste Management Plan, 2012 Annual Report, Figure 20: Southeast Resource Recovery Facility.

County of Los Angeles. 2016. Countywide Integrated Waste Management Plan, 2016 Annual Report, Figure 18: Southeast Resource Recovery Facility.

County of Los Angeles Department of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992).

Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT). 2013. State of California Sea-Level Rise Guidance Document March.

Federal Highway Administration (FHWA). Construction Noise Handbook, Table 9.1 (August 2006).

Federal Railroad Administration. 2012. *High-Speed Ground Transportation Noise and Vibration Impact Assessment.* September.

Federal Transit Administration. *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. December.

_____. *Transit Noise and Vibration Impact Assessment Manual* (September 2018)

Gateway Cities Council of Governments. Gateway Cities Member Agency Contacts. Website: http://www.gatewaycog.org/who-we-are/member-agency-contacts (accessed July 6, 2018).

Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control*.

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

_____. 2007. *Climate Change 2007: The Physical Science Basis. Summary for Policymakers*. Website: http://www.ipcc.ch (accessed March 22, 2016).

The International Energy Agency (IEA). 2011. World Energy Outlook. Released on November 9, 2011. Website: http://www.worldenergyoutlook.org/weo2011/ (accessed May 2016).

Long Beach Development Services. 2016. Website: http://www.lbds.info/tod_pedestrian_master_plan/ (accessed May 6, 2019).

_____. 2017. Website: http://www.lbds.info/cx3pedplan/ (accessed May 6, 2019).

Long Beach Energy Resources Department. Website: http://www.longbeach.gov/energyresources// (accessed December 11, 2018).

Long Beach Gas and Oil. Acceptable Waste. Website: http://www.longbeach.gov/lbgo/about-us/serff/acceptable-waste/ (accessed July 10, 2018).

Long Beach Municipal Gas and Oil Department. Acceptable Waste. Website: http://www.longbeach.gov/lbgo/about-us/serff/acceptable-waste/ (accessed December 22, 2015).

_____. Fiscal Year 2015 Adopted Budget, Long Beach Gas & Oil. Website: http://www.longbeach.gov/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/fy-15-adopted-budget-webpage/long-beach-gas-and-oil/ (accessed December 22, 2015).

_____. Website: http://www.longbeach.gov/lbgo/ (accessed December 22, 2015).

Long Beach Public Library (LBPL). Facts and Figures. Website. http://www.lbpl.org/info/about/facts_and_figures.asp (accessed July 30, 2018).

_____. FY 2018 Budget, Website: http://www.longbeach.gov/globalassets/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/proposed-budget/27-fy-18-library-services (accessed September 4, 2018).

_____. Library Hours. Website: http://www.lbpl.org/locations/library_hours.asp (accessed July 30, 2018).

_____. Library Locations. Website: http://www.lbpl.org/locations/library_loc ations.asp (accessed July 30, 2018).

Long Beach Unified School District (LBUSD). 2018. *School Facilities Needs Analysis*. February 2018.

_____. 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).

_____. About Long Beach Unified School District. Website: http://www.lbschools.net/District/ (accessed July 30, 2018).

_____. District Map. Website: http://www.lbschools.net/Asset/Files/District/LBUSD-District-Map.pdf (accessed October 4, 2018)

Long Beach Water Department (LBWD). 2010. *Urban Water Management Plan*.

_____. 2016. *Long Beach Water 2015 Urban Water Management Plan*. Adopted June 2, 2016.

_____. 2018. Budget Summary Fiscal Year 2019, Website: http://www. lbwater.org/sites/default/files/fileattach/FY%2019%20Budget%20Summary_Reduced.pdf (accessed October 5, 2018).

Long Beach Water Department and Water Replenishment District of Southern California. *Final Recycled Water Master Plan*. November 2010.

Los Angeles County Airport Land Use Plan (ALUP). 1991.

Los Angeles County Metropolitan Transportation Authority (Metro). 2010. Congestion Management Plan for Los Angeles County.

Los Angeles County Sanitation Districts (LACSD), Southeast Resource Recovery Facility (SERRF) Brochure. Website: http://lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp (accessed October 4, 2018).

_____. Solid Waste & Landfills. Waste-By-Rail. Website: http://www.lacsd.org/solidwaste/wbr/default. asp (accessed July 10, 2018).

_____. About the Sanitation Districts. Website: http://www.lacsd.org/aboutus/default.asp (accessed July 10, 2018).

_____. JWPCP Total Energy Facility. Website:http://www.lacsd.org/solidwaste/swpp/energy recovery/digestergastoenergy/jwpcpwrptotalenergy.asp (accessed July 11, 2018).

_____. Wastewater Loadings for Each Class of Land Use. Website: http://lacsd.org/civica/filebank/blobd load.asp?BlobID=3531 (accessed July 11, 2018

_____. Southeast Resource Recovery Facility (SERRF) Brochure. Website. http://www.lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp (accessed July 11, 2018).

Los Angeles Daily News. *Puente Hills Landfill Will Close Forever Thursday.* Website: http://www.dailynews.com/environment-and-nature/20131031/puente-hills-landfill-will-close-forever-thursday (accessed December 22, 2015).

LSA Associates, Inc. 2015. *Initial Study*. May.

_____. 2019. *Air Quality Impact Analysis*. June.

_____. 2019. *Methodology for Calculating Growth in Socioeconomic Data Associated with the Long Beach General Plan Land Use Element Memorandum*. January 2, 2019.

_____. 2019. *Noise and Vibration Impact Analysis*. June.

_____. 2019. *Traffic Impact Analysis.* June.

Metropolitan Water District of Southern California (MWD). 2015. *2015 Regional Urban Water Management Plan* (2015 Regional UWMP), adopted in June 2016.

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).

Orange County Airport Environs Land Use Plan (AELUP) for the Joint Forces Training Base (JFTB) at Los Alamitos (1975)

Port of Long Beach. 1978. *Port Master Plan* (PMP).

_____. 1990. Master Plan/Port Master Plan Update (certified in 1990). Website: http:// www.polb.com/facilities/masterplan/default.asp (accessed September 13, 2018).

Public Resources Code (PRC). Division 20. California Coastal Act (2019). Website: https://www. coastal.ca.gov/coastact.pdf.

South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*.

_____. 2008*. Multiple Air Toxics Exposure Study in the South Coast Air Basin* (MATES III). September.

_____. 2014. *Facility Information Details Maps. Pinpoint Locations of Permitted Facilities.*

_____. 2015. Air Quality Significance Thresholds. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

_____. 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).

_____. 2016. *Final 2016 Air Quality Management Plan*. March.

Southern California Association of Governments (SCAG). 2012. 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). April 4, 2012.

_____. Final 2016 RTP/SCS Growth Forecast by Jurisdiction. April.

_____. 2016. *2016–2040 RTP/SCS, The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life.* Adopted April 2016.

Southern California Edison (SCE). Powering Southern California for 130+ Years, Website: https:// www.sce.com/ about-us/who-we-are (accessed December 19, 2018).

_____. 2016. Newsroom Fact Sheet, updated November 18, 2016.

_____. 2017. Power Content Label, updated July 2018.

Southern California Gas Company (SoCal Gas). California Gas and Electric Utilities. *2018 California Gas Report*. Website: https://www.socalgas.com/regulatory/documents/cgr/2018_Cali fornia_Gas_Report.pdf (accessed December 11, 2018).

State of California*. California Environmental Quality Act (CEQA) Statute and Guidelines.*

State of California, Department of Finance (DOF). 2018. *E-5 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2017 and 2018.* Sacramento, California, May 2018 (accessed July 6, 2018).

_____. 2018. Report E-1 Population Estimates for Cities, Counties, and the State. Website: http://www. dof.ca.gov/ Forecasting/ Demographics/Estimates/E-1/ (accessed July 6, 2018).

State of California Governor's Office of Planning and Research (OPR). 2008. *Proposed Amendments to CEQA Guidelines, Appendix F – Energy Analysis*.

_____. 2017. *State of California General Plan Guidelines*.

State of California Water Boards. 2018. Los Angeles Regional Water Quality Control Board, Storm Water-Municipal Permits (last updated September 17, 2018). Website: http://www.water boards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/ (accessed July 11, 2018).

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.

The White House. Office of the Press Secretary. "Obama Administration Finalizes Historic 54.5 MPG Fuel Efficiency Standards. Website: https://obamawhitehouse.archives.gov/the-press-office/2012/08/28/obama-administration-finalizes-historic-545-mpg-fuel-efficiency-standard (accessed March 19, 2019).

Transportation Research Board. 2016. *Highway Capacity Manual* (HCM), 6th Edition.

United Nations Framework Convention on Climate Change (UNFCCC). 2016. GHG data from UNFCCC. Website: https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc (accessed February 2019).

United States Census Bureau (U.S. Census Bureau). 2016. American Community Survey, 2016 Demographic and Housing Estimates. DP05 2012-2016 American Community Survey 5-Year Estimates-City of Long Beach.

_____. 2016. American Community Survey, 2016 Demographic and Housing Estimates. DP05 2012-2016 American Community Survey 5-Year Estimates-Los Angeles County.

_____. 2017. American Community Survey, 2017 American Community Survey 1-Year Estimates, Table B01003. Website: http://factfinder2. census.gov> (accessed December 28, 2018).

_____. 2017. American Community Survey, 2017 Population Estimates, Los Angeles County.

_____. 2017. American Community Survey, 2017 Population Estimates, City of Long Beach.

United States Energy Information Administration (EIA). 2018. California State Profile and Energy Estimates. Rankings: Natural Gas Marked Production 2017. Website: https://www.eia.gov/state/rankings/?sid= CA#/series/47 (accessed December 17, 2018).

_____. California Profile Analysis, State Profile and Energy Estimates Profile. Website: https://www.eia.gov/state/analysis.php?sid=CA#40 (accessed February 13, 2019).

_____. California Profile Overview. Website: https://www. eia.gov/state/?sid=CA#tabs-1, -2, -4 (accessed December 12, 2018 and April 17, 2019).

_____. Independent Statistics and Analysis. Frequently Asked Questions. Website: https://www.eia.gov/tools/faqs/faq.php?id =23&t= 10 (accessed March 19, 2019).

United States Department of Housing and Urban Development (HUD). 2016. *Assessment of Fair Housing*.

U.S. Department of Transportation (DOT). "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: https://www.bts.gov/archive/publications/national_transportation_statistics/table_04_23/ (accessed March 19, 2019).

United States Environmental Protection Agency (USEPA). 2015. *Black Carbon*. Website: www3.epa.gov/blackcarbon/basic.html (accessed March 2019). September.

_____. 2016. *Climate Impacts on Human Health*. April. Website: https://www3.epa.gov/climate change/impacts/health.html (accessed March 2019).

United States Geological Survey. 2006. GIS data.

Western Regional Climate Center, 2015. Website: https://wrcc.dri.edu/.

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.

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12.0 LIST OF ACRONYMS AND ABBREVIATIONS

°C	Celsius
°F	Fahrenheit
µg/m^3	micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACM	asbestos-containing material
ADT	average daily traffic
AELUP	Airport Environs Land Use Plan
af/yr	acre feet per year
AFH	Assessment of Fair Housing
ALUC	Airport Land Use Commission
ALUP	Airport Land Use Plan
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
Basin	South Coast Air Basin
BMP	best management practices
BTU	British thermal units
CAA	(Federal) Clean Air Act
CAAP	Climate Action and Adaptation Plan
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMOD	California Emissions Estimator Model
Cal EMA	California Emergency Management Agency
Cal/EPA	State of California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen Code	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board

CARB Handbook	CARB's *Air Quality and Land Use Handbook*
CAT	Climate Action Team
CBC	California Building Code
CC	Community Commercial (PlaceType)
CCA	California Coastal Act
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CCSP	Climate Change Science Program
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CPTED	Crime Prevention Through Environmental Design
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFC	California Fire Code
CFCs	chlorofluorocarbons
CH_4	methane
City	City of Long Beach
CIRIS	City Inventory Reporting and Information System
CIWM	California Integrated Waste Management Act of 1989
CIWMB	California Integrated Waste Management Board
CM	Compliance Measures
CMP	Los Angeles County Congestion Management Plan
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CO_2e/yr/SP	carbon dioxide equivalent per year per service population
County	Los Angeles County
CPTED	Crime Prevention Through Environmental Design
CPUC	California Public Utilities Commission

CUPA	Certified Unified Program Agency
CVC	Century Villages at Cabrillo
DART	Downey Area Recycling and Transfer Facility
dB	decibels
dBA	A-weighted decibels
DOC	California Department of Conservation
DOE	United States Department of Energy
DOF	California Department of Finance
DOT	United States Department of Transportation
DPM	diesel particulate matter
DT	Downtown (PlaceType)
du/ac	dwelling units per acre
DWR	Department of Water Resources
EB	eastbound
EDD	State of California Employment Development Department
EIA	Energy Information Administration
EIR	Environmental Impact Report
EO	Executive Order
EPA	United States Environmental Protection Agency
ER Department	Emergency Resources Department
ESHA	Environmentally Sensitive Habitat Area
EWMP	Enhanced Watershed Management Program
FAA	Federal Aviation Administration
FAR	floor-to-area ratio
FCN	Founding and Contemporary Neighborhood (PlaceType)
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
FTE	Full time equivalent

FY	Fiscal Year
g/bhp-hr	grams per brake horsepower-hour
GCC	global climate change
GHG	greenhouse gas
gpd	gallons per day
GPG	General Plan Guidelines
GPS	global positioning system
GW	gigawatt
GWh	gigawatt hours
GWP	Global Warming Potential
HCM	*Highway Capacity Manual*
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
HQTA	High Quality Transit Area
HRA	Health Risk Assessment
HUD	U.S. Department of Housing and Urban Development
HVAC	heating, ventilation, and air-conditioning
I	Industrial (PlaceType)
I-405	Interstate 405
I-605	Interstate 605
I-710	Interstate 710
ICU	Intersection Capacity Utilization
IEA	International Energy Agency
IFC	International Fire Code
lM	Implementation Measures
IPCC	United Nations Intergovernmental Panel on Climate Change
IS	Initial Study
IS/NOP	Initial Study/Notice of Preparation
IWMP	Integrated Waste Management Plan
JFTB	Joint Forces Training Base
JPA	(SERRF) Joint Powers Authority

JWPCP	Joint Water Pollution Control Plant
kBtu	1,000 British thermal units
KBtu/acre	1,000 British thermal units per acre
kW	kilowatt
kWh	kilowatt hour
kW/day	kilowatts per day
L_{10}	noise level exceeding 10 percent
L_{50}	noise level exceeding 50 percent
L_{90}	noise level exceeding 90 percent
LACSD	Sanitation Districts of Los Angeles County
LADOT	Los Angeles Department of Transportation
LBFD	Long Beach Fire Department
LBGO	Long Beach Municipal Gas and Oil Department
LBP	lead-based paints
LBPD	Long Beach Police Department
LBPL	Long Beach Public Library
lbs	pounds
lbs/1,000 sf/day	pounds per thousand square feet per day
lbs/day	pounds per day
lbs/sf/day	pounds per square feet per day
lbs/unit/day	pounds per unit per day
LBSWMP	Long Beach Storm Water Management Program
LBT	Long Beach Transit
LBUSD	Long Beach Unified School District
LBWD	Long Beach Water Department
LCFF	Local Control Funding Formula
LCFS	Low Carbon Fuel Standard
LCP	Local Coastal Program
L_{dn}	average night level
L_{eq}	Total Sound Energy of Time-Varying Noise
LID	Low Impact Development

L_{max}	highest exponential time-averaged sound level
LOS	level of service
LSA	LSA Associates, Inc.
LST	Localized Significance Threshold
LUE	(General Plan) Land Use Element
MATES	Multiple Air Toxics Exposure Study
Metro	Los Angeles County Metropolitan Transportation Authority
MFI	median family income
MFR-L	Multi-Family Residential-Low (PlaceType)
MFR-M	Multi-Family Residential-Moderate (PlaceType)
mg/m^3	milligrams per cubic meter
mgd	million gallons per day
MMT	million metric tons
MOP	Mobility of People (Mobility Policy)
mph	miles per hour
MPO	Metropolitan Planning Organization
MRF	Materials Recovery Facility
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
MW	megawatts
MWD	Metropolitan Water District of Southern California
MWh	megawatt hour
MWh/yr	megawatt hours per year
N	Neo-Industrial (PlaceType)
N/A	not applicable
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NB	northbound
NCCP	Natural Communities Conservation Plan

NEVs	neighborhood electric vehicles
NI	Neo-Industrial (PlaceType)
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxide
NPDES	National Pollution Discharge Elimination System
NRC	National Research Council
NSC-L	Neighborhood-Serving Center or Corridor – Low (PlaceType)
NSC-M	Neighborhood-Serving Center or Corridor - Moderate (PlaceType)
O_3	ozone
OCTA	Orange County Transportation Authority
OEHHA	State Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
OITC	Outdoor/Indoor Transmission Class
OS	Open Space (Place Type)
OSHA	Occupational Safety and Health Administration
Pb	lead
PCB	polychlorinated biphenyl
PCH	Pacific Coast Highway (also known as State Route 1)
pc/mi/ln	passenger cars per mile per lane
PDF	Project Design Feature
PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PMP	(Port of Long Beach) Port Master Plan
POLA	Port of Los Angeles
POLB	Port of Long Beach
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity

PRC	Public Resources Code
proposed project	Recirculated Draft Environmental Impact Report General Plan Land Use and Urban Design Elements Project
RCP	Regional Comprehensive Plan
RHNA	Regional Housing Needs Assessment
RMS	root-mean-square
ROC	reactive organic compounds
ROGs	reactive organic gases
ROW	right-of-way
RPS	Renewable Portfolio Standard
RSF	Regional-Serving Facility (PlaceType)
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SC	Standard Condition
SCAG	Southern California Association of Governments
SCAP	(City of Long Beach) *Sustainable City Action Plan*
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCH	State Clearinghouse
SCS	Sustainable Communities Strategy
SEASP	Southeast Area Specific Plan
SELAC	Southeast Los Angeles County
SERRF	Southeast Resource Recovery Facility
sf	square foot/feet
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides

SP	service population
SR-1	State Route 1 (also known as Pacific Coast Highway [PCH])
SR-22	State Route 22
SR-47	State Route 47
SR-91	State Route 91
SR-103	State Route 103
SRE	(General Plan) Scenic Routes Element
SRRE	Source Reduction and Recycling Element
STAR	(Long Beach Transit) Systemwide Transit Analysis and Reassessment Initiative
State	State of California
State CEQA Guidelines	California Natural Resources Agency adopted the amendments to the *State CEQA Guidelines* in November 2018
STC	Sound Transmission Class
SUSMP	Standard Urban Storm Water Mitigation Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T-BACTs	best available control technologies for toxics
TACs	toxic air contaminants
TAZ	Traffic Analysis Zone
TIA	Traffic Impact Analysis
TMDL	total maximum daily load
TOD-L	Transit-Oriented Development-Low (PlaceType)
TOD-M	Transit-Oriented Development-Moderate (PlaceType)
tpd	tons per day
TREC	Traveling Recycling Education Center
TRB	Transportation Research Board
UDE	(General Plan) Urban Design Element
UNFCCC	United Nations Framework Convention on Climate Change
UPRR	Union Pacific Rail Road
U.S. Census Bureau	United States Census Bureau

U.S. EPA	United States Environmental Protection Agency (see also USEPA, EPA)
USEPA	United States Environmental Protection Agency (also U.S. EPA and EPA)
USFWS	United State Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Planning Act
v/c	volume to capacity
VdB	velocity in decibels
VHFHSZ	very high fire hazard severity zones
VMT	vehicle miles traveled
VOC	volatile organic compounds
WB	westbound
WF	Waterfront (PlaceType)
WDID	Waste Discharge Identification Number
WMAs	Watershed Management Areas
WMP	Watershed Management Program
WQMP	Water Quality Management Plan
WRD	Water Replenishment District of Southern California
WRP	(Long Beach) Water Reclamation Plant
WSA	Water Supply Assessment