3 ENVIRONMENTAL SETTING

3.1 REGIONAL SETTING

The project site is located in the City of Long Beach, in southern Los Angeles County, within the greater Los Angeles metropolitan area (refer to Figure 2-1, Regional Location, and Figure 2-2, Project Location, both of which can be found in Section 2, Project Description). Long Beach is approximately 20 miles south of downtown Los Angeles and is located adjacent to the Pacific Ocean. The total area of the City is approximately 33,908 acres (53 square miles). The Mediterranean climate of the region and coastal influence produce moderate temperatures year round, with rainfall concentrated in the winter months. The region is subject to various natural hazards, including earthquakes, tsunami and flooding.

3.2 PROJECT SITE SETTING

The project site includes several areas throughout downtown Long Beach: Civic Block, Lincoln Park Block, Third & Pacific Block, and Center Block. The larger portion of the project site is bounded by Magnolia Avenue and Chestnut Avenue to the west, Broadway to the north, Pacific Avenue to the east, and Ocean Boulevard to the south. A smaller part of the project site is bounded by Third Street, Cedar Avenue, and Pacific Avenue.

The project site is located within the Downtown Plan Area, which encompasses approximately 719 acres bounded by the Los Angeles River on the west and Ocean Boulevard on the south. The northern boundary of the Plan Area generally follows portions of 7th and 10th streets, and the eastern boundary includes land on both sides of Alamitos Avenue.

Downtown Long Beach is a modern, cosmopolitan area that adjoins a vibrant seaport and waterfront district that provides numerous venues for entertainment, shopping, and tourism. Both sides of Ocean Boulevard are lined with high-rise and mid-rise residential, hotel, commercial, and corporate office buildings, including the Civic Center complex. As described in the Downtown Plan, distinct neighborhood "character areas" within Downtown include the Business and Entertainment Area centered on Pine Avenue, which primarily functions as Downtown's entertainment corridor with many shops, restaurants, and theaters; the West End, containing low-rise single- and multi-family residences and neighborhood amenities of churches, schools, and Cesar Chavez Park; the Willmore City/Drake Park historic district to the northwest, which features residences of the early 1900s and tree-lined streets; the North Pine neighborhood, which has a variety of housing types, including modern high-rise and mid-rise residential and mixed-use buildings and neighborhood businesses; and East Village, which is the center of local arts and culture with small businesses, galleries, and shops that attract both tourists and local residents.

The Downtown Plan Area and surrounding areas are developed with a variety of commercial and residential uses in buildings generally ranging from one story to more than 20 stories in height. Uses include historic structures that reflect various eras of development extending back more than 100 years. Historic buildings are frequently intermixed with more contemporary structures. Densities range from open space and surface parking, to the most intensive development found in Long Beach, such as the World Trade Center and other skyscrapers and full-block developments.

Photos of the project site and surrounding uses are shown in Figure 4.1-2a through 4.1-5b in Section 4.1, *Aesthetics*. The project site setting is described in greater detail in the individual environmental issue analyses in Section 4.0, *Environmental Impact Analysis*.

3.3 CUMULATIVE PROJECTS SETTING

CEQA defines "cumulative impacts" as two or more individual events that, when considered together, are considerable or will compound other environmental impacts. Cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed project and other nearby projects. For example, traffic impacts of two nearby projects may be insignificant when analyzed separately, but could have a significant impact when analyzed together. Cumulative impact analysis allows the SEIR to provide a reasonable forecast of future environmental conditions and can more accurately gauge the effects of a series of projects.

Cumulative impacts are discussed within each of the specific impact analysis discussions in Section 4, *Environmental Impact Analysis*. Section 15130 of the *CEQA Guidelines* states that an adequate discussion of cumulative impacts should include either a list of past, present, and probable future projects producing related or cumulative impacts; or a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect.

For cumulative impacts that are localized in nature, such as aesthetics, cultural resources, geology and soils, and noise, the cumulative analysis in this SEIR uses the list of planned and pending projects in the general area shown in Table 3-1. The projects in this list consist of planned or pending projects within a two-mile radius of the project site. Twelve planned or pending projects were identified within this area and are shown in Figure 3-1.

For certain cumulative impacts with a larger area of potential effect (impacts that may combine with the impacts of other projects on a city-wide, regional, state-wide, or even global level), the "summary of projections" method is used in this SEIR. For example, Section 4.2, *Air Quality*, of this SEIR uses land use projections from the Long Beach Downtown Plan EIR, summarized in Table 3-3. Full implementation of the Downtown Plan would increase the density and intensity of existing Downtown land uses by allowing up to: (1) approximately 5,000 new residential units; (2) 1.5 million square feet of new office, civic, cultural, and similar uses; (3) 384,000 square feet of new retail; (4) 96,000 square feet of restaurants; and (5) 800 new hotel rooms. The additional development projected in the Downtown Plan would occur over a 25-year time period. The Downtown Plan EIR assumed that buildout of the Civic Center area would include development of up to 800 residential units, 460,000 square feet of office/commercial floor area, 64,000 square feet of retail space and 16,000 square feet of restaurant uses within the Civic Center area (see Table 3-3).

Other impacts, such as greenhouse gas emissions that may contribute towards global warming, are cumulative by nature, with no localized impacts that could be attributed to any one project alone. The cumulative impacts analysis for such impacts therefore notes this fact and explains that the analysis contained throughout the impact analysis is cumulative in nature. The cumulative impacts analysis for Section 4.6, *Transportation and Traffic*, is conducted under year 2020 traffic conditions. The future year scenario is taken from the Traffic Impact Analysis (TIA) for the proposed project completed in June 2015 by Linscott, Law, and Greenspan, which assumed a 1 percent annual growth rate factor from Year 2015 for Year 2020 Conditions, in addition to the planned and pending projects shown in Table 3-1.

Table 3-1
Planned and Pending Projects in the Vicinity of the Project Site

No.	Project	Address	Description/Size
1	207 East Seaside Way Apartments	207 East Seaside Way, Long Beach	113 Apartments
2	Silversands	2010 East Ocean Boulevard, Long Beach	40 Hotel Rooms and 56 DU Condominiums
3	Mixed-Use Project	125 Linden Avenue, Long Beach	25 Apartments and 1,257 SF Retail
4	City Hall East	100 Long Beach Boulevard, Long Beach	156 Apartments and 3,621 SF Retail
5	Ocean Center Building Reuse	110 West Ocean Boulevard, Long Beach	81 Apartments, 5,000 SF Restaurant and 5,400 SF Retail
6	Oceanaire Residential Project	150 West Ocean Boulevard, Long Beach	216 Apartments
7	The Pike Outlet Conversion Project	Generally south of Seaside Way between Cedar Avenue and Pine Avenue, Long Beach	Conversion of Retail/Entertainment Center to Retail Outlet Center and the construction of 49,825 SF of new retail space
8	442 West Ocean Boulevard Apartments	442 West Ocean Boulevard, Long Beach	95 DU apartments
9	SRG 1st Alamitos Development	101 Alamitos Avenue, Long Beach	7-story mixed-use project with 141 DU condominiums, 2,700 SF of commercial, and 213 parking stalls
10	200 West Ocean Boulevard Apartments	200 West Ocean Boulevard, Long Beach	Conversion of an existing nine-story office building with three levels of subterranean parking into a 94 unit apartment building with ground level commercial spaces (4,597 sf), including the addition of two stories at 200 W. Ocean Blvd.
11	City Ventures Development	227 Elm Avenue, Long Beach	4-story, 40 DU residential townhome development
12	Shoreline Gateway (The Current)	777 E. Ocean Boulevard, north of Ocean Boulevard and east of Alamitos Boulevard, Long Beach	Buildout of the site: 445 residential condominium units and 15,549 SF retail

Source: Linscott, Law and Greenspan, Engineers, Traffic Impact Analysis, June 2015.
SF = Square-Feet; DU = Dwelling Unit

Table 3-2
Planned and Pending Projects Summary[1]

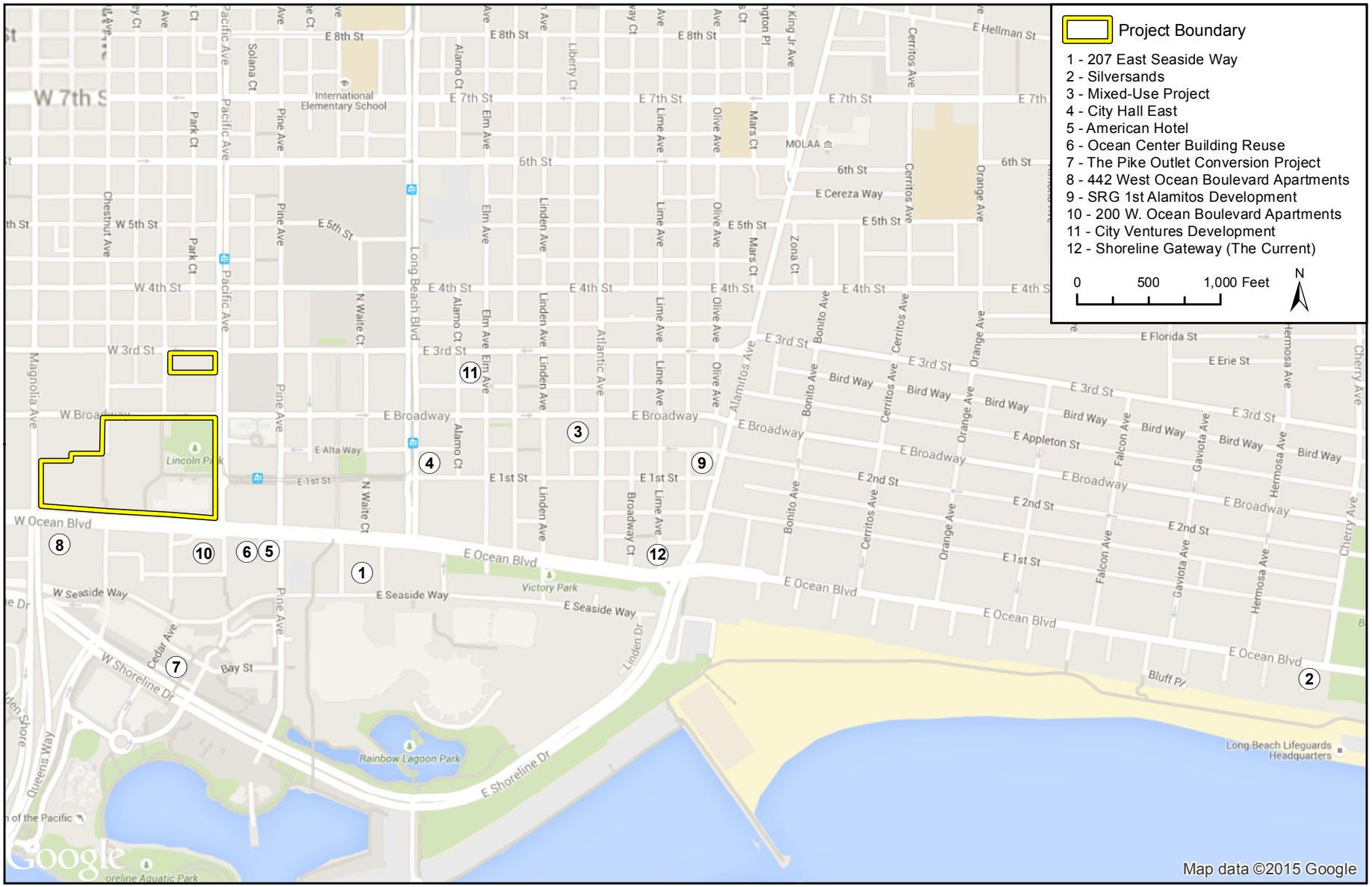
Land Use	Development Statistics
Residential	1,462 DU
Office/Commercial	7,297 SF
Retail	75,652 SF
Restaurant	5,000 SF
Hotel	40 Rooms

Source: Table 3-1
Notes: SF = Square-Feet; DU = Dwelling Unit
[1] Not all planned and pending projects are within the Downtown Plan Area

Table 3-3
Estimated Downtown Plan Buildout

Civic Center Area[1,2]	
Land Use	**Development Statistics**
Residential	800 DU
Office/Commercial	460,000 SF
Retail	64,000 SF
Restaurant	16,000 SF
Downtown Plan Area[2]	
Land Use	**Development Statistics**
Residential	5,000 DU
Office, Civic, and Cultural	1.5 million SF
Retail	384,000 SF
Restaurant	96,000 SF
Hotel	800 rooms

[1] Source: Iteris, Long Beach Downtown Community Plan EIR Traffic Impact Analysis, 2010
[2] Source: Long Beach Downtown Plan EIR, December 2010
SF = Square-Feet; DU = Dwelling Unit



Imagery provided by Google and its licensors © 2015.

Location of Planned and Pending Projects

Figure 3-1

This page intentionally left blank.

4 ENVIRONMENTAL IMPACT ANALYSIS

This section discusses the possible environmental effects of the proposed project for the specific issue areas that were identified through the Notice of Preparation (NOP)/Scoping process as having the potential to experience significant impacts.

"Significant effect" is defined by the *CEQA Guidelines* §15382 as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant."

The assessment of each issue area begins with a discussion of the environmental setting related to the issue, which is followed by the impact analysis. Within the impact analysis, the first subsection identifies the methodologies used and the "significance thresholds," which are those criteria adopted by the City, other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text, with the discussion of the effect and its significance following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

> ***Class I.*** *Significant and Unavoidable: An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the CEQA Guidelines.*
>
> ***Class II.*** *Significant but Mitigable: An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings to be made under §15091 of the CEQA Guidelines.*
>
> ***Class III.*** *Not Significant: An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.*
>
> ***Class IV.*** *Beneficial: An effect that would reduce existing environmental problems or hazards.*

Following each environmental impact discussion is a listing of mitigation measures (if recommended or required) and the residual effects or level of significance remaining after the implementation of the measures. In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other future development in the area.

Please refer to the Executive Summary of this SEIR, which clearly summarizes all impacts and mitigation measures that apply to the proposed project.

This page intentionally left blank.

4.1 AESTHETICS

This section addresses potential impacts related to aesthetics, including changes in public views and visual character, and consistency with adopted urban design policies.

4.1.1 Setting

This section provides an overview of the existing visual character and quality of the project site and surrounding area, in order to evaluate potential aesthetic impacts that could occur as a result of the proposed project. The visual character and quality is based on the physical appearance and characteristics of the environment, such as the proximity and balance of man-made structures with open space or landscaping, and views of public open space or of more distant landscape features or built landmarks.

a. Visual Character of the Project Site Vicinity. The project site is located in the Civic Center portion of the Downtown Plan area of Long Beach, and is generally surrounded by a mix of uses and development, including residential, retail, commercial space, and recreational areas. The area is highly urbanized consisting of several high-rise office and multi-family residential buildings of varying architectural styles, a pedestrian plaza, and features a coordinated streetscape. An aerial photograph identifying the project site and surrounding land uses is provided in Figure 2-2 in Section 2, *Project Description*.

Major thoroughfares in the vicinity include Ocean Boulevard to the south, Magnolia Avenue to the west, and Pacific Avenue to the east. Ocean Boulevard has three travel lanes and one parking lane in each direction. The eastbound and westbound lanes of Ocean Boulevard are separated by a large landscaped median consisting of ground covering, public art, shrubs, and jacaranda trees. The sidewalk along the north side of Ocean Boulevard (adjacent to the project site) is lined with a variety of trees (including palms and magnolias), a grassy strip, and a sloping landscaped berm with shrubs and ground covering. The south side of Ocean Boulevard between Magnolia and Pacific is comprised of high-rise residential buildings (up to 25 stories in height), a high-rise office building (approximately 15 stories in height), and a single-story strip retail building (City of Long Beach, 2014). All of these buildings are set back approximately 30 feet from the street with landscaped buffers containing grass, shrubs, and palm trees within Victory Park.

To the west of the project site is the Glenn M. Anderson Federal Building, which sits directly west of the former courthouse building, at the northwest corner of Ocean Boulevard and Magnolia Avenue. Immediately west of the Federal Building is the World Trade Center building. North of Broadway are existing residential (apartment) development and mixed-use buildings. Immediately west of the Third and Pacific Block is the First Congregational Church, at the southwest corner of Third and Cedar. North of Third Street are residential and mixed use developments, while the block immediately east of Pacific Avenue contains residential, as well as high-rise commercial and mixed-use buildings.

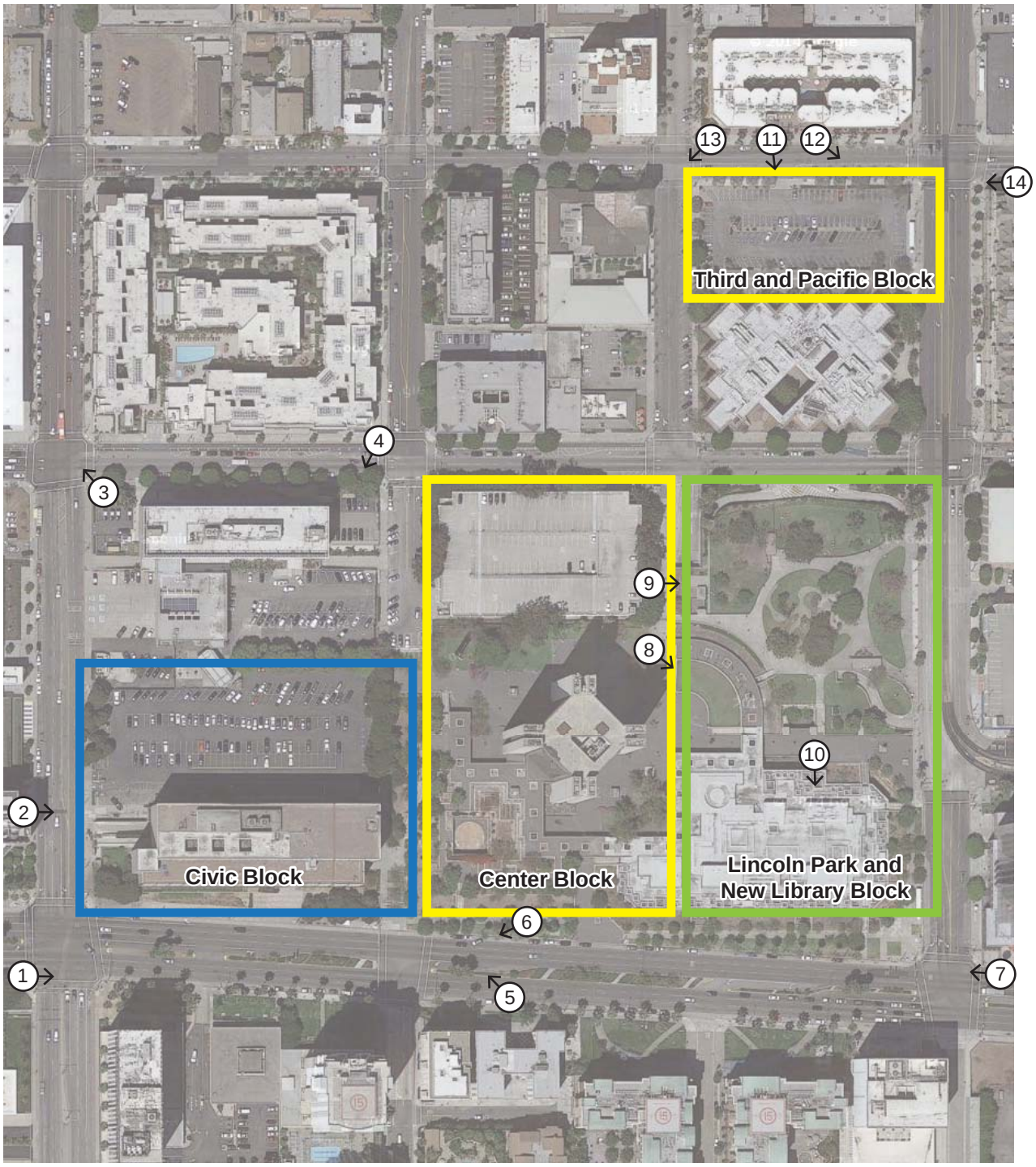
There are no State-designated scenic highways in the City of Long Beach, although a portion of the California Pacific Coast Highway (Highway 1) is identified by the California Department of Transportation (DOT) as an "Eligible State Scenic Highway – Not Officially Designated" (DOT, 2015). Ocean Boulevard is a locally-designated "scenic route," meaning that it is identified in the Scenic Routes Element (1997) of the Long Beach General Plan as a route that traverses areas of scenic beauty and interest.

b. Visual Character of the Project Site. Figures 4.1-1 through 4.1-5b illustrate the existing conditions and visual quality and character of the project site and surrounding area from various viewpoints. As mentioned, the project site is bordered by Ocean Boulevard to the south, Magnolia Avenue to the west, Broadway and Third Street to the north, and Pacific Avenue to the east. In addition, Chestnut Avenue and Cedar Avenue extend from Broadway through the proposed project site, toward Ocean Boulevard, connecting Broadway and Ocean Boulevard.

The proposed project would include activities on four distinct blocks, which are fully developed under existing conditions. A series of photos were taken in May 2015 of these block areas, in order to document existing visual conditions in the project area. Figure 4.1-1 (May 2015 Photo Locations) indicates the orientation of the views shown in these photos relative to existing and proposed site conditions. Figures 4.1-2a through 4.1-5b provide views within and surrounding the project site as Photos 1 through 14, described below.

- ***Civic Block (Figures 4.1-2a and 4.1-2b).*** *Consists of the former Long Beach Courthouse and parking area. Photo 1 is looking easterly down Ocean Boulevard, with the old Courthouse on the left and the existing City Hall building in the distance. Photo 2 provides a view of the existing parking lot behind the old Courthouse. Photos 3 and 4 show surrounding development north of the Civic Block (that would not be affected by the proposed project developments).*
- ***Center Block (Figures 4.1-3a and 4.1-3b).*** *Consists of the existing City Hall structure and Broadway parking structure. Photo 5 shows the existing City Hall building. Photo 6 shows existing development on the opposite side of Ocean Boulevard (that would not be affected by the project). Photo 7 is looking westerly down Ocean Boulevard, with the project site to the right and existing development to the left.*
- ***Lincoln Park and New Library Block (Figures 4.1-4a and 4.1-4b).*** *Consists of the City's Main Library, Lincoln Park, and Broadway Parking Structure. Photo 8 is a view of the existing Lincoln Park and Main Library, and Photo 9 is a view of the existing Lincoln Park. Photo 10 is a view of the existing Main Library and Centennial Plaza.*
- ***Third and Pacific Block (Figures 4.1-5a and 4.1-5b).*** *This parcel consists of a vacant surface parking lot. Photos 11 and 12 are views of the Third and Pacific Block and surrounding development from Third Street to the north. Photo 13 is a view of First Congregational Church to the west of the Third and Pacific Block. Photo 14 is looking to the west down Third Street from east of the Third and Pacific Block, with the proposed project site to the left and the First Congregational Church in the distance, beyond the future project site.*

These figures are utilized in the impact analysis provided in Section 4.1.3 to characterize how the proposed project could potentially result in changes in aesthetic conditions.



Existing Conditions
May 2015 Photo Locations

Figure 4.1-1

Photo 1: Looking East down Ocean Boulevard from the southwest corner of Ocean and Magnolia. The old Long Beach Courthouse is on the left, at the northeast corner of Ocean and Magnolia. City Hall is in the distance, between the palm trees.

Photo 2: Looking East across Magnolia Avenue at the parking lot behind the old Long Beach Courthouse on the project site. City Hall and the old Long Beach Courthouse are visible to the right. The Long Beach Police Department building is visible to the left.

Civic Block Photos

Figure 4.1-2a

Photo 3: Looking Northwest from Magnolia Avenue and Broadway towards the Governor George Deukmejian Courthouse.

Photo 4: Looking to the Southwest from Broadway and Chestnut Avenue at the Long Beach Police Department building.

Civic Block Photos

Figure 4.1-2b

Photo 5: Looking Northwest across Ocean Boulevard at City Hall. The old Long Beach Courthouse is visible to the left.

Photo 6: Looking West along Ocean Boulevard at surrounding residential and commercial buildings across from the project site.

Center Block Photos

Figure 4.1-3a

Photo 7: Looking West along Ocean Boulevard. The project site is to the right and existing residential and commercial buildings are to the left.

Center Block Photos

Figure 4.1-3b

Photo 8: Looking Southeast from Broadway Parking Garage through the project site at Lincoln Park to the left and the existing Long Beach Public Library to the right.

Photo 9: Looking East from the Broadway Parking Garage through the project site at the existing Lincoln Park.

Lincoln Park & New Library Block Photos Figure 4.1-4a

Photo 10: Looking South from Centennial Plaza at the existing Long Beach Public Library on the proposed project site.

Lincoln Park & New Library Block Photos Figure 4.1-4b

Photo 11: Looking South through the proposed project site from the north side of 3rd Street, between Cedar Avenue and Pacific Avenue. The existing City Hall is visible to the right.

Photo 12: Looking Southeast through the proposed project site from the north side of 3rd Street, towards residential and commercial buildings on the east side of Pacific Avenue.

3rd and Pacific Block Photos Figure 4.1-5a

Photo 13: Looking Southwest at First Congregational Church from the intersection of Cedar Avenue and 3rd Street. Parking lot visible to the left is the proposed project site. The existing City Hall building is visible in the distance.

Photo 14: Looking West down 3rd Street, from between Pacific Avenue and Pine Avenue. Residential (apartment) development at the intersection of 3rd Street and Pacific Avenue is visible on the left. First Congregational Church, located at 241 Chestnut Street, is visible in the distance on the left.

3rd and Pacific Block Photos Figure 4.1-5b

c. Regulatory Setting. There are no federal or state regulations related to visual character and quality applicable to the proposed project. Locally, the City of Long Beach has policies in place which focus on protecting views of the City's natural resources and views along significant streets and boulevards, as summarized below.

General Plan - Scenic Routes Element. The City of Long Beach General Plan, Scenic Routes Element (1997) proposed five scenic route systems within the City for potential adoption as official scenic routes within the City. Of these routes, only Ocean Boulevard was officially adopted by the City as a scenic route. Ocean Boulevard is adjacent to the project site on the south, and proposed changes situated along the southern portion of the project blocks would be visible from Ocean Boulevard; these include the City Hall and Port buildings on the Civic Center Block, the residential/commercial building on the Commercial/Center Block, and the proposed Lincoln Park on the Lincoln Park & New Library block.

General Plan - Land Use Element. The City of Long Beach General Plan, Land Use Element (1975) addresses issues related to urban design and the overall aesthetic quality of the City. The Urban Design Analysis contained within the Land Use Element outlines policies related to the visual character of the City and emphasizes visual compatibility along corridors as well as good design and landscaping.

Long Beach Downtown Plan (PD-30). Section 4 of the Downtown Plan provides design standards and guidelines that regulate and guide all development in Downtown Long Beach. The standards and guidelines emphasize design principles intended to produce good buildings, great streets, and memorable places as well as high-quality architecture and urban form.

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

4.1.2 Previous Environmental Review

The Long Beach Downtown Plan EIR (the "Downtown Plan EIR") examined the aesthetic characteristics of the region and the potential impacts associated with development of the entire Downtown Plan area. The EIR determined that the visual character of the Downtown Plan area would be altered through the introduction of additional high-rise structures and full-block complexes at locations within the plan area. However, the EIR determined that due to the design framework provided by the Plan, the aesthetic change within Downtown would be beneficial and impacts to visual character would be less than significant. Implementation of the Downtown Plan would result in light and glare impacts that the Downtown Plan EIR determined would be significant but mitigable. The proposed project would be subject to Downtown Plan EIR Mitigation Measures AES-2(a) through AES-2(d), which include site plan and design review procedures. The Downtown Plan EIR determined that implementation of the Downtown Plan would result in significant and unavoidable shadow impacts. The proposed project would be subject to the mitigation measures identified in the EIR, specifically AES-3, *Shadow Impacts*, which requires a shading study for structures exceeding 75 feet in height or any structure that is adjacent to a light sensitive use and exceeds 45 feet in height.

The proposed project includes the demolition of the former Long Beach Courthouse. The Long Beach Courthouse Demolition Project was studied in a Draft EIR (SCH# 2014051003) that was circulated in October and November of 2014, but was not certified. The Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to aesthetics would be potentially significant but mitigatable to a less than significant level with the implementation of mitigation measures to provide temporary visual barriers to the active construction area.

4.1.3 Impact Analysis

a. Methodology and Significance Thresholds. The assessment of aesthetic impacts involves qualitative analysis that is inherently subjective in nature. Different viewers react to viewsheds and aesthetic conditions differently. This evaluation measures the proposed project against existing visual conditions, analyzing the nature of the anticipated change. As described above, the project site was observed and photographically documented in May 2015. A series of 14 photos are provided on Figures 4.1-2a through 4.1-5b, with orientation of these photos provided on Figure 4.1-1 (May 2015 Photo Locations), which shows photo orientation in comparison to existing and proposed conditions. The figures and photos are utilized in this impact analysis to characterize how the visual environment and aesthetic conditions would change with implementation of the proposed project.

An environmental impact is considered significant if the proposed project would result in one or more of the following conditions, as described in Appendix G of the State *CEQA Guidelines*:

- *Have a substantial adverse effect on a scenic vista;*
- *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;*
- *Substantially degrade the existing visual character or quality of the site and its surroundings; or*
- *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.*

The Initial Study that was prepared for the proposed project (see Appendix A) included an initial evaluation of aesthetic impacts, and determined that the project would not result in a significant impact associated with the introduction of a new source of substantial light or glare; therefore, this issue is not further addressed in the SEIR. The Initial Study determined that the proposed project could potentially result in significant impacts associated with adverse effects on scenic vistas, damage to scenic resources including historic buildings within a state scenic highway, and degradation of visual character or quality of the site and its surroundings; therefore, these issues are assessed in detail in the following impact analysis. In addition, the Long Beach Downtown Plan identifies that potential impacts of downtown development may include shadow and shading effects that would adversely affect sensitive receptors; therefore, the potential effects of shadow and shading associated with the proposed project are assessed in this section.

For potentially significant aesthetic impacts, mitigation measures are introduced where feasible to reduce or avoid potential impacts.

Evaluation of Shadow Effects. The City of Long Beach Downtown Plan EIR identifies potential aesthetic impacts of downtown development (such as would occur under the

proposed project) related to the introduction of shadows and shading effects from tall buildings, that could adversely affect existing and future visual receptors in the area. Therefore, this analysis of potential aesthetic impacts of the proposed project also addresses the potential for shadow and shading impacts to occur. In identifying and characterizing impacts of shadows and shading, the following factors are considered:

- *Affected land use (Is the affected [shadowed] land use light-sensitive such that sunlight is essential to its function?)*
- *Duration of shadow/shading (How many hours per day would an affected land use experience shadow/shading from the project?)*
- *Time of day (Is the affected land use affected by shadow/shade at a time of day when sunlight is most important?)*
- *Season (What time of year would affected land use[s] be in shadow/shade as a result of the project?)*
- *Extent of effect (What percentage of an affected land use would be affected by shadow/shade?);*
- *Nature of the shadows (Does the project's shadow have a more solid or dappled quality?)*
- *Pre-existing conditions (Are there other landforms or development that currently shadow/shading on the land uses affected by the project?)*

In order for a significant adverse impact to result from project-related shadows/shading, the following criterion is used:

- *The project increases shadows cast upon shadow-sensitive uses, and results in shading for more than three hours between late October and early April (including Winter Solstice), or for more than four hours between early April and late October (including Summer Solstice).*

Facilities and operations sensitive to the effects of shading include the following: routinely useable outdoor spaces (yards, playgrounds, etc.) associated with residential, recreational, or institutional land uses; solar collectors; nurseries; or primarily outdoor-oriented commercial uses (e.g., certain restaurants). These uses are considered sensitive because sunlight is important to their function, physical comfort, and/or commerce (City of Long Beach, 2010).

b. Project Impacts and Mitigation Measures.

Threshold:	*Have a substantial adverse effect on a scenic vista;*
Threshold:	*Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.*

Impact AES-1 The proposed project would alter site-specific visual features by replacing existing buildings and land uses, but would not substantially damage scenic resources, including those related to a scenic vista or state scenic highway, and potential impacts to scenic resources would be Class III, *less than significant*.

The proposed project is located in an urbanized area characterized by flat topography, where viewsheds are comprised of existing buildings, streets, and trees such as in Lincoln Park and the Ocean Boulevard median. Due to the flat topography and existing development, there are no

scenic vistas on the project site or in the immediate vicinity. The project would include the extension of Chestnut Street and Cedar Street, to connect Broadway to the north and Ocean Boulevard to the south. This would extend views to the south from Broadway and views to the north from Ocean Boulevard, but would not introduce a new scenic vista to the area.

As discussed above, the proposed project would alter the layout of the project site, and introduce structures of up to approximately 432 feet in height. Main roads that provide views of the project site include Ocean Boulevard, Broadway, and Third Street. Existing buildings along the south side of Ocean Boulevard currently block southward views of the Pacific Ocean from the project site and surrounding area. As shown on Figures 4.1-6a and 4.1-6b, the proposed mixed-use tower on the Center Block would be taller than other high-rise structures in the area. It is possible that views of the Pacific Ocean may be created on the upper (residential) levels of this mixed-use tower without obstructing other views of the ocean within the area. Southward ocean views from the residential developments on the south side of Ocean Boulevard (see Photos 6 and 7) would not be affected by the project.

Ocean Boulevard, which provides the southern boundary of the project area, is a locally-designated "scenic route," meaning that it is identified in the Scenic Routes Element (1997) of the Long Beach General Plan as a route that traverses areas of scenic beauty and interest. Ocean Boulevard is not a State-designated scenic highway, which would require the government with jurisdiction over abutting land to adopt a "Scenic Corridor Protection Program" limiting development, outdoor advertising, and earthmoving activities (DOT, 2015). Guidance regarding development along Ocean Boulevard is provided in the City of Long Beach Local Coastal Program (1980), *General Transportation and Access Policies* section (City of Long Beach, 1980), as well as in the City of Long Beach Zoning Ordinances. The proposed project would alter views of the project site from Ocean Boulevard, such as where the structures in Photo 1 would be replaced by taller structures under the proposed project, and where the existing library in Photo 10 would be replaced by the relocated Lincoln Park under the proposed project.

As described in the Cultural Resources Study provided as Appendix B, existing structures that would be replaced under the proposed project include the existing Long Beach Courthouse and City Hall-Library Complex, which have been found to be individually eligible for the California Register of Historical Resources (CRHR), although they have not been officially listed on the CRHR or the National Register of Historic Places (NRHP). Nevertheless, these structures are considered contributors to the Long Beach Civic Center Historic District, which is not a designated historic district, but is a distinct grouping of civic and governmental properties united historically by plan and physical development. They are also considered eligible for City of Long Beach Landmark Designation and are therefore considered historical resources for the purposes of CEQA. As described in the Cultural Resources Study, demolition of these structures constitutes a significant direct impact to cultural resources insofar as it entails a substantial adverse change in the significance of historical resources. As noted above, the project site is visible from main roads including Ocean Boulevard, Broadway, and Third Street. However, for the purposes of characterizing impacts to visual resources under the thresholds listed above, removal of these structures would not constitute a significant aesthetic impact because they are not located on a State-designated scenic highway or within a designated scenic vista. In addition, visual changes included under the proposed project may also introduce an improvement to aesthetics of the site, as the architecture of existing structures including the City Hall and Civic Center buildings is outdated and not visually consistent with current design

styles. Following implementation of the proposed project, new structures that would occupy the project site would be visually consistent with the surrounding area.

There is one designated historic building in the project area, the First Congregational Church, which is located at 241 Cedar Avenue, adjacent to the west of the Third and Pacific Block. As described in the Cultural Resources Study provided as Appendix B, this church is listed in the NRHP and CRHR as a historic resource. Photo 13 (Figure 4.1-5b) provides a view of the First Congregational Church from the northwest corner of the proposed Third and Pacific Block; this view would remain unobstructed with the proposed project. Photo 14 (Figure 4.1-5b) provides a west-looking view down Third Street from east of the proposed project site, with the First Congregational Church in the background on the left. With implementation of the proposed project, the northern portion of the Third and Pacific Block, currently occupied by a surface parking lot, would be replaced with a residential development, including surrounding landscaping consisting of shrubs and trees; this would obstruct the view of First Congregational Church currently available from east of the project site, as shown on Photo 14. However, Third Street is not a state scenic highway or a designated local view corridor; therefore, this view alteration would not be a significant impact.

The proposed project would not include any actions with potential to affect scenic resources, scenic views or viewsheds, or scenic route designations along Ocean Boulevard, including but not limited to scenic resources such as trees, rock outcroppings, and historic buildings located within a State-designated scenic highway.

Mitigation Measures. None required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Looking southwest through project area, Pacific Avenue shown in lower left.

Source: Skidmore, Owings & Merrill LLP, March 2015.

Aerial Photosimulations

Figure 4.1-6a

Looking east through project area, Ocean Boulevard shown on right.

Source: Skidmore, Owings & Merrill LLP, March 2015.

Aerial Photosimulations

Figure Figure 4.1-6b

Threshold:	*Substantially degrade the existing visual character or quality of the site and its surroundings.*

Impact AES-2 The project would alter existing visual characteristics of the project site and surroundings, but would be consistent with the Downtown Plan and would not degrade existing visual character or quality. The Downtown Plan EIR determined that buildout of the Downtown Plan would result in a Class III, less than significant impact. The project would result in temporary construction impacts to visual character and quality that would be Class II, *less than significant with mitigation.*

As described in Section 2, *Project Description*, the proposed project would occur on four distinct "blocks." Figures 4.1-2a through 4.1-5b provide photos of existing visual conditions in the project area, as described in Section 4.1.1(a); Figure 4.1-1 (May 2015 Photo Locations) identifies the perspective of these photos relevant to existing conditions and proposed site conditions. The following overview describes how these existing conditions/views would be affected by the proposed project.

- ***Civic Block**. Construction on the Civic Block would follow demolition of the former Long Beach Courthouse, which currently occupies the site. The old Courthouse building shown on Photo 1 and the parking area shown on Photo 2 would be replaced by the proposed City Hall and Port buildings, both of which would be almost twice as tall as the existing old Courthouse (additional discussion provided below, in the shadow effects analysis provided under Impact AES-3). Although the proposed project structures on this block would be taller than the existing old Courthouse building, they would be visually consistent with surrounding structures, including residential and mixed use developments to the south of Ocean Boulevard, the Glenn M. Anderson Federal Building to the northwest of the Civic Block, the existing Long Beach Police Department building on the north of the Civic Block, and proposed developments on the Center Block, as shown on the visual simulations provided as Figures 4.1-6a and 4.1-6b.*
- ***Center Block**. The existing City Hall structure would be demolished, and replaced with a mixed-use tower approximately 432 feet in height comprised of residential and retail uses, possibly also with a hotel. The views of the existing City Hall structure provided in Photos 2, 5, 11, and 13 would be altered in that the mixed-use tower would replace the existing City Hall structure. Figures 4.1-6a and 4.1-6b provide photo simulations of the proposed project development, including the new mixed-use tower that would replace the existing City Hall structure. Although these changes would alter views of the project site, the changes would be visually consistent with the surrounding area, including other mixed-use developments and high-rise structures in the project area.*
- ***Lincoln Park and New Library Block**. The existing Main Library, located in the southern portion of this block, would be demolished and rebuilt on top of the existing Lincoln Garage roof deck on the northern portion of this block. The roof of the new Main Library would be up to 42 feet in height. The existing location of the Main Library would be redeveloped into a new Lincoln Park. As a result, views of the existing library currently provided in Photos 8 and 10 would be replaced with views of the new Lincoln Park, and the view of the existing Lincoln Park currently provided in Photo 9 would be replaced with a view of the new Main Library. These changes would be visually consistent with current aesthetic conditions on the project site.*

- ***Third and Pacific Block***. *A seven-story residential structure (up to 70 feet tall) and parking structure with up to three above-ground levels would be constructed on what is currently a surface-level parking lot. This would alter the views provided in Photos 11 and 12, as the proposed structure would obstruct views from Third Street of existing structures to the south and east of the Third and Pacific Block. However, as shown on the visual simulations provided as Figures 4.1-6a and 4.1-6b, the new structures on the Third and Pacific Block would be visually consistent with the surrounding area, and with other residential and mixed use developments surrounding the project site.*

As discussed above, the proposed project would alter existing visual characteristics of the project site, but would be visually consistent with surrounding conditions and uses. Also as previously noted, existing structures on the project site that would be replaced with the proposed development, including the existing City Hall and Civic Center structures, are architecturally outdated and their replacement with new structures as proposed may represent an aesthetic improvement to existing conditions. The proposed project would be visually compatible with the existing high-density and mixed-use visual character of the project area, and would not permanently degrade the existing visual character or quality of the area.

Construction activities associated with the proposed project may cause a visual condition that is temporarily unappealing, both from within the project site and from views in the immediate vicinity. This could occur as a result of the use and presence of construction vehicles and equipment, the demolition of existing structures and removal of existing park areas, and the unfinished looks associated with constructing new infrastructure and facilities. Mitigation measures are recommended to minimize or avoid the temporary adverse visual impacts associated with the project's construction period, and to ensure that the project would not substantially degrade existing visual character or quality.

Mitigation Measures. Mitigation Measure AES-2 would minimize or avoid temporary impacts to visual character and quality by requiring visual screening where feasible, and ensuring that the area remain as clean and free of debris as possible.

AES-2 **Construction Screening.** Temporary fencing comprised of chain link or wood with screening material attached shall be used around the perimeter of the active construction site to buffer views of construction activities, as well as the staging of vehicles, equipment, and materials. In addition, the contractor shall affix or paint a plainly visible sign, on publically accessible portions of the temporary fencing, with the following language: "POST NO BILLS". Such language shall appear at intervals of no less than 25 feet along the length of the publically accessible portions of the barrier. The contractor shall ensure through daily visual inspections that no unauthorized materials are posted on any temporary construction barriers or temporary pedestrian walkways, and that such temporary barriers and walkways are maintained in a visually attractive manner, including the prompt removal of graffiti, throughout the construction period.

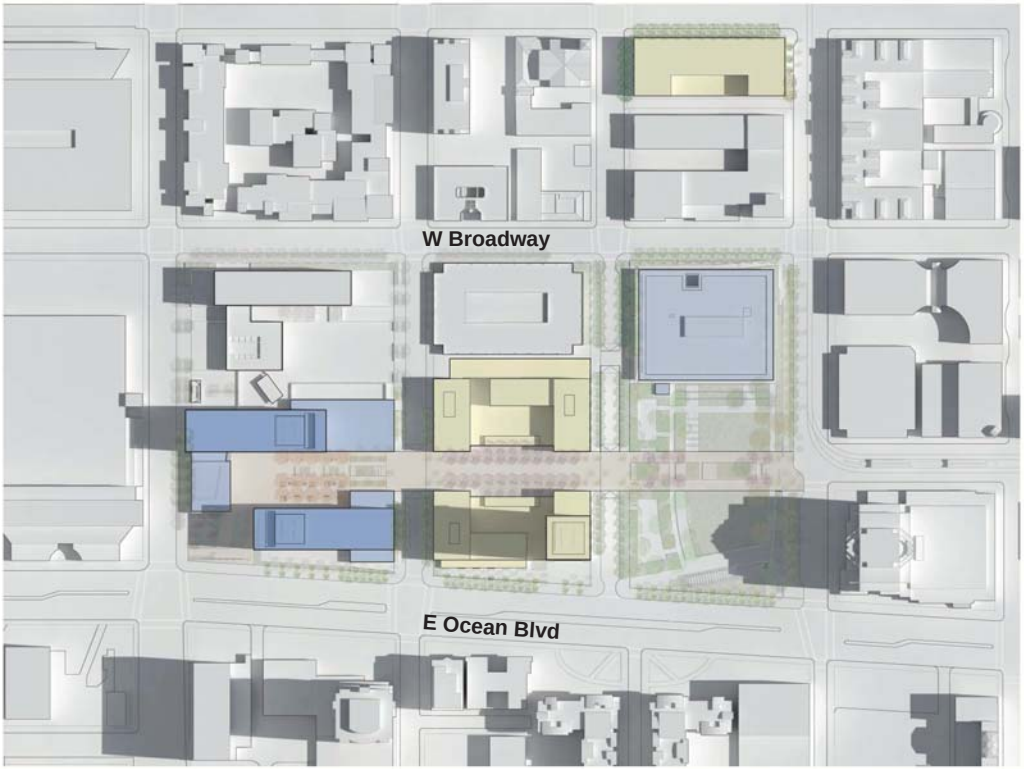
Significance After Mitigation. Impacts would be less than significant with mitigation.

Threshold:	*Increase shadows cast upon shadow-sensitive uses, and result in shading for more than three hours between late October and early April (including Winter Solstice), or for more than four hours between early April and late October (including Summer Solstice).*

Impact AES-3 The proposed project includes high-rise structures that would cast shadows onto adjacent properties. The Downtown Plan EIR determined that shadow impacts would be Class I, significant and unavoidable. However, shadows from project structures would not fall on sensitive residential, public gathering, and school uses for more than three hours during Winter months or for more than four hours during Summer months. The proposed project would not contribute to this Class I impact and would, therefore, have a Class III, *less than significant* impact.

As discussed in the Long Beach Downtown Plan EIR, adoption of the Downtown Plan was anticipated to introduce a variety of new development projects to the City, including high-rise structures such as would occur under the proposed project. Where new structures are substantially taller than the existing and/or surrounding buildings, substantially longer and broader shadows may occur, particularly at the street level. Shadows cast by buildings are typically longest at the Winter Solstice and shortest at the Summer Solstice, transitioning through the equinox seasons (where the "equinox" is the period when the sun crosses Earth's equator, so that the day and the night are of approximately the same duration).

The Long Beach Downtown Plan EIR includes Mitigation AES-3 (Shadow Impacts), which requires a shading study for projects that would introduce a structure(s) of 75 feet or more in height, or any structure that is adjacent to a light-sensitive use and exceeds 45 feet in height. Figures 4.1-7a through 4.1-7d provide sun-shadow diagrams for the Summer Solstice and Winter Solstice, at the following modeled times: 9:00 a.m., 11:00 a.m., 1:00 p.m., and 3:00 p.m. Table 4.1-1 provides an overview of the shadow effects shown on Figures 4.1-7a through 4.1-7d, with respect to how sensitive uses in the project area would be affected.



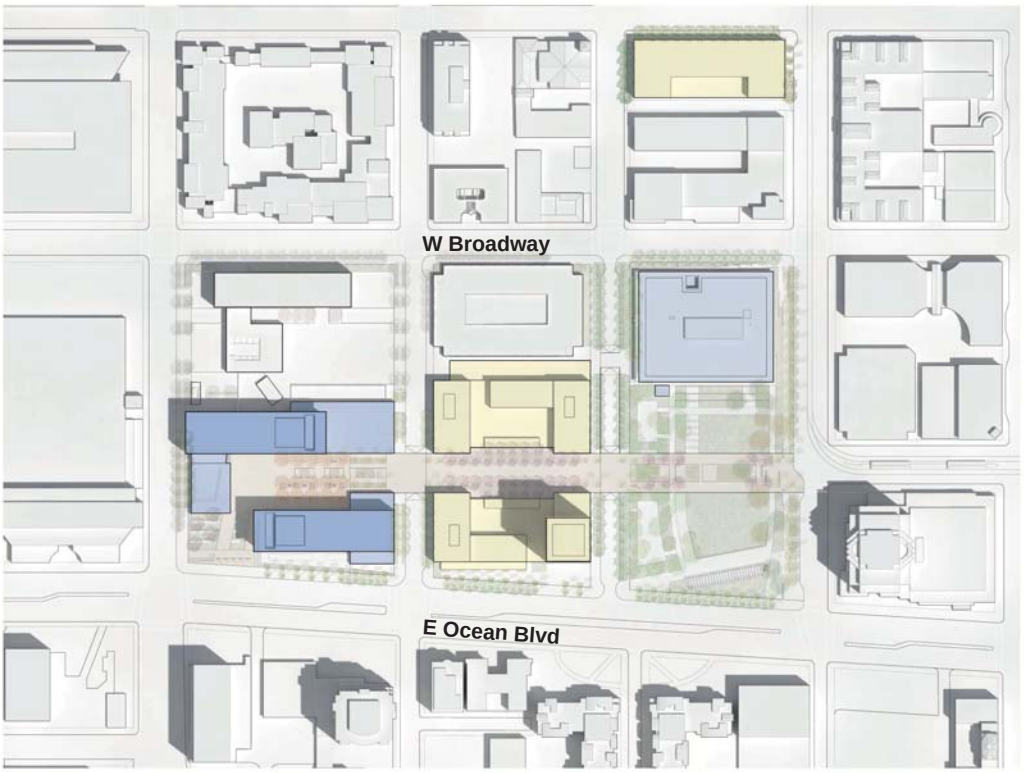
Summer Solstice - 9am

Winter Solstice - 9am

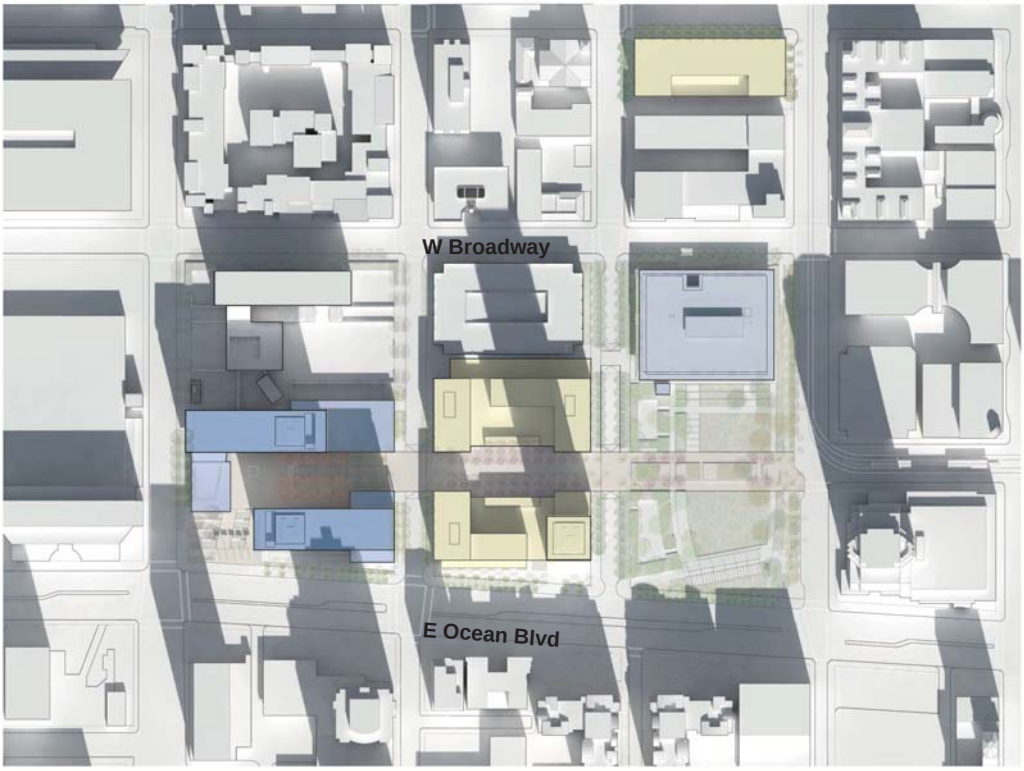
- Civic: City Hall and Port Headquarters
- Long Beach Main Library
- Private Development
- Lincoln Park

Sun Shadow Diagrams - 9:00 am

Figure 4.1-7a



Summer Solstice - 11am

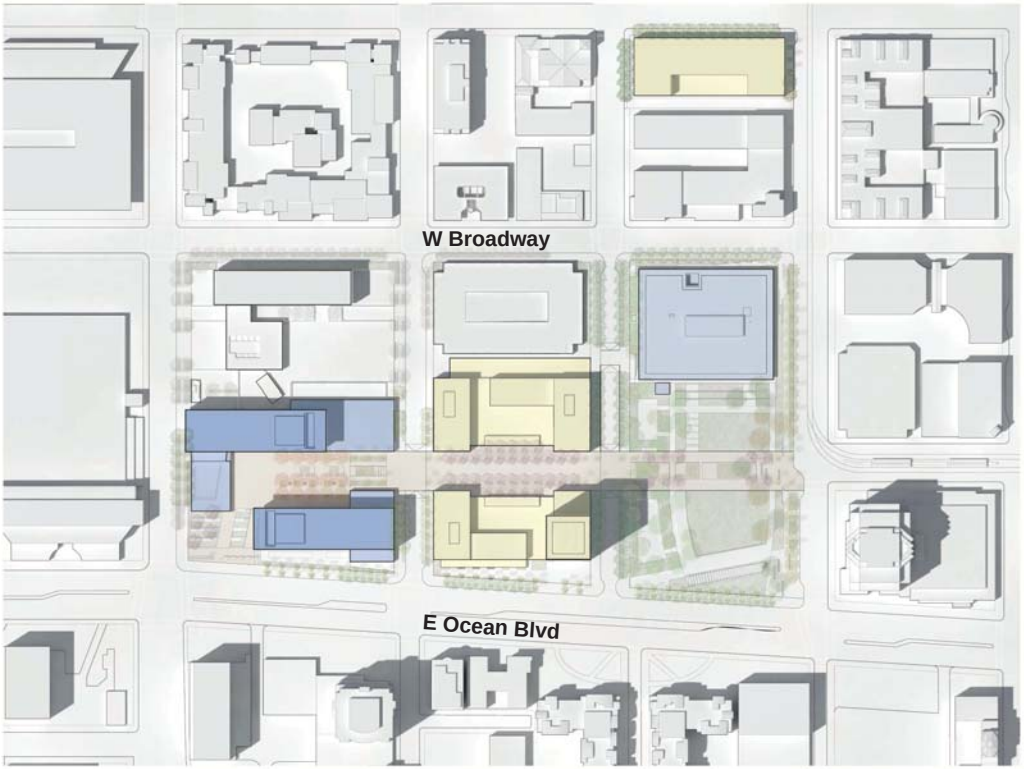


Winter Solstice - 11am

- Civic: City Hall and Port Headquarters
- Long Beach Main Library
- Private Development
- Lincoln Park

Sun Shadow Diagrams - 11:00 am

Figure 4.1-7b



Summer Solstice - 1pm

Winter Solstice - 1pm

- Civic: City Hall and Port Headquarters
- Long Beach Main Library
- Private Development
- Lincoln Park

Sun Shadow Diagrams - 1:00 pm

Figure 4.1-7c

Summer Solstice - 3pm

Winter Solstice - 3pm

- Civic: City Hall and Port Headquarters
- Long Beach Main Library
- Private Development
- Lincoln Park

Sun Shadow Diagrams - 3:00 pm

Figure 4.1-7d

Table 4.1-1
Shade and Shadow Effects

Time	Summer Solstice	Winter Solstice
9:00 a.m.	Shadows almost directly to the west. The new City Hall building would shade Magnolia Avenue. The new mixed use building would shade itself. The Center Block, in general, would shade the new Chestnut Street extension. The new Lincoln Park would be partly shaded by an existing structure to the east (Ocean Boulevard and Pacific Avenue). The new structure at Third and Pacific would shade a portion of Cedar Street, comparable to the adjacent existing structure on the same block.	Shadows cast to the northwest. Heavy shading throughout the project site from existing structures in the area. The Port building and City Hall would be almost completely shaded. The new City Hall would shade a portion of the existing Long Beach Fire Department building. The new mixed-use structure on the Center Block would partly shade the existing Long Beach Police Department building, and an apartment building north of Broadway (at Magnolia). Existing structures would shade the new Main Library. The new structure at Third and Pacific would shade portions of Third Street to the north and Cedar Street to the east.
11:00 a.m.	Shadows to the west-northwest. The new Port building and City Hall would cast minimal shadow towards the northwest, not affecting other structures. The new mixed-use tower would partially shade the new commercial development on the Center Block. The Lincoln Park and New Library Block would be virtually free of shade/shadow.	Shadows to the north-northwest. The new Port building would be partially shaded by existing development on the south side of Ocean Boulevard. The new City Hall building would shade the existing Long Beach Fire Department building. The new mixed-use tower would cast a shadow across the Center Block and West Broadway. The new structure at Third and Pacific would shade a portion of Third Street.
1:00 p.m.	Shadows to the northeast. The new Port building would shade a portion of the new Chestnut Street extension. The new mixed-use tower would shade a portion of the new Lincoln Park.	Shadows to the north-northeast. Existing structures on the south side of Ocean Boulevard would shade portions of the new Port building, City Hall, and commercial developments. The new City Hall building would shade the existing Long Beach Fire Department building. The new mixed-use tower would shade a portion of the new Main Library, Lincoln Park, and West Broadway. The new structure at Third and Pacific would shade a portion of Third Street.
3:00 p.m.	Shadows almost directly to the east. The new Port building and City Hall would shade portions of the new Chestnut Street extension. The new commercial buildings on the Center Block would shade portions of the new Cedar Street extension. The new mixed-use tower would cast a shadow across the new Lincoln Park. The new structure at Third and Pacific would shade a portion of Pacific Avenue, comparable to the adjacent existing structure on the same block.	Shadows to the northeast. Heavy shading throughout the project site from existing structures in the area. The Civic Block and Center Block would be almost entirely shaded by existing structures west of Magnolia and south of Ocean. The new City Hall building would partially shade the existing Long Beach Fire Department building. The new mixed-use tower would cast a shadow across the new Lincoln Park, the new Main Library, and structures to the north of Broadway and Pacific. The new structure at Third and Pacific would cast a shadow across both streets.

Comparison of Figures 4.1-7a through 4.1-7d and consideration of the summary descriptions provided above indicate that that the new buildings that would be constructed under the proposed project would not introduce new shadows or shading that would adversely affect shadow-sensitive land uses in the area. The most extended shadowing effects associated with the project would affect surrounding roadways, which are not considered sensitive uses.

The most substantial shadows associated with the proposed project would occur as a result of the new 432-foot-tall mixed-use tower on the Center Block. At 9:00 a.m. during the Winter Solstice, this tower would shade a portion of the existing apartment building located on the northeast corner of Broadway and Magnolia; however, by 11:00 a.m. this shadow would have moved to the east, partially shading a structure on the north side of Broadway. By 1:00 p.m., also during the Winter Solstice, this shadow would have stretched farther to the east, partially shading the new Main Library. This progression indicates that although some residential land uses in the project area would be partially shaded by project structures, such shading would last for less than two hours at a time. In addition, this shading would not affect "routinely useable outdoor spaces associated with" residential land uses and, therefore, would not significantly affect residential-related sensitive uses.

As described in Section 4.1.3(a), the threshold of significance for shadow and shading impacts is the creation of extended periods of shading on "shadow-sensitive" uses that result in shading for more than three hours over the Winter Solstice or four hours over the Summer Solstice. As shown on Figures 4.1-7a through 4.1-7d, during the Winter Solstice the existing Long Beach Fire Department building would be partially or fully shaded by the proposed new City Hall building throughout the day (partial shading at 9:00 a.m. and 3:00 p.m.; full shading at 11:00 a.m. and 1:00 p.m.). The Fire Department building, located in the northern portion of the Civic Block, is presently shaded by the Long Beach Courthouse. The existing Long Beach Courthouse is comprised of two sections, of which the southern (closer to Ocean Boulevard) is five stories tall and the northern (closer to Broadway) is six stories tall. Both sections would be demolished as part of the project and replaced by the City Hall building, which would be 11 stories tall, almost twice as tall as the tallest portion of the Courthouse; therefore, shadows cast by the City Hall building on the Fire Department building would be more substantial than those cast by the Courthouse. However, the Fire Department building is not a "shadow-sensitive" use, and doesn't include a "routinely useable outdoor space" which is a qualifier for being recognized as a "sensitive" use. In addition, as shown on Figures 4.1-7a through 4.1-7d, shadowing from the project would only occur during the Winter Solstice, with no shadowing effects during the Summer Solstice. Therefore, the seasonal shading of the existing Fire Department building that would occur as a result of the new City Hall building would not be a significant adverse effect.

The Long Beach Downtown Plan FEIR identifies that development which occurs under the Downtown Plan could result in significant and unavoidable shade/shadow impacts to Long Beach Unified School District (LBUSD) schools. The structures included under the proposed project are not located near an existing LBUSD school site, and would not result in shade/shadow effects on LBUSD schools. Potential shade/shadow effects of the proposed project, as characterized above and pictured on Figures 4.1-7a through 4.1-7d, would be less than significant.

Mitigation Measures. None required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

c. Cumulative Impacts. Planned and pending projects in the vicinity of the project site are identified in Table 3-1 in Section 3, *Environmental Setting*. These planned and pending projects, as well as other future projects in the vicinity of the proposed project, would be

expected to be consistent with the Long Beach Downtown Plan and design standards specified therein, including as related to aesthetics. The Downtown Plan EIR determined that given the City's current regulations and guidelines on the scale and design of new projects, Downtown development would generally further the City's goal of a more intensely developed and vibrant urban environment with a stronger pedestrian orientation for Downtown Long Beach, and the cumulative visual effect of development in the area would be less than significant.

In addition, as discussed in the Downtown Plan EIR, cumulative aesthetic impacts associated with shade and shadow from high-rise downtown developments would be significant and unavoidable, as assessed on the programmatic level. The impact analysis provided above for the proposed project determines that shade and shadow effects associated with the proposed project would be less than significant, because project structures would not cast shade or shadows on a shadow-sensitive use or on routinely useable outdoor space. Therefore, the proposed project would not contribute to cumulative shade- or shadow-related impacts.

As determined in the impact analysis provided above in Section 4.1.3(b), the proposed project would not result in significant adverse impacts to aesthetics. The proposed project would not create impacts to aesthetic resources that could combine with similar impacts of other projects in the cumulative environment to result in a significant adverse impact. Although cumulative development may, over time, alter the visual character of this part of Long Beach, such development would be subject to the same policies and regulations as the proposed project and would be expected to generally enhance aesthetic conditions in the Downtown area. Cumulative impacts related to aesthetics would be less than significant.

4.2 AIR QUALITY

This section analyzes the proposed project's temporary and long-term impacts to local and regional air quality. Greenhouse gas emissions are discussed in Section 4.4, *Greenhouse Gas Emissions*. This section uses data generated using the California Air Emissions Estimator Model (CalEEMod), which can be found in Appendix C.

4.2.1 Setting

The project site is located in the City of Long Beach, which is part of the South Coast Air Basin (Basin) and under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

a. Climate and Meteorology. Air quality in the Basin is affected by various emission sources (mobile and industry, etc.) as well as atmospheric conditions such as wind speed, wind direction, temperature, and rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States give the Basin the worst air pollution problem in the nation.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thunder showers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Long Beach WSCMO Station climatological station monitored precipitation from April 1958 to March 2013. Average monthly rainfall measured in Long Beach during that period varied from 2.90 inches in February to 0.42 inch or less between May and October, with an annual total of 12.01 inches.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. 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 to late afternoons on hot summer days. Winter inversions frequently break by midmorning.

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 pollutant concentrations are 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 problem is the accumulation of carbon monoxide (CO) and nitrogen oxides (NO_X) due to 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.

b. Sensitive Receptors. Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public

most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore, schools and hospitals. Sensitive receptors likely to be affected by air quality impacts associated with project construction include residential areas near the project site. The nearest existing residential sensitive receptors are located 100 feet north of the Third and Pacific Block proposed development, across Third Street. In addition, the proposed project's residential uses and library would be considered sensitive receptors. The First Congregational Church of Long Beach, located at 241 Cedar Avenue, is also a sensitive receptor and is located 85 feet west of the proposed construction area.

c. Air Pollution Regulation.

Federal Regulations/Standards. Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. Environmental Protection Agency (U.S. EPA) established national ambient air quality standards (NAAQS). The NAAQS were established for six major pollutants termed "criteria" pollutants, which are those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health. The current AAQS plus the California standards (which are generally more stringent than federal standards) are shown in Table 4.2-1.

Table 4.2-1
Current Federal and State Ambient Air Quality Standards

Pollutant	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.14 ppm (24-hr avg) 0.075 ppm (1-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 $\mu g/m^3$ (3-month avg)	1.5 $\mu g/m^3$ (30-day avg)
Particulate Matter (PM_{10})	150 $\mu g/m^3$ (24-hr avg)	20 $\mu g/m^3$ (annual avg) 50 $\mu g/m^3$ (24-hr avg)
Particulate Matter ($PM_{2.5}$)	15 $\mu g/m^3$ (annual avg) 35 $\mu g/m^3$ (24-hr avg)	12 $\mu g/m^3$ (annual avg)

ppm= parts per million
$\mu g/m^3$ = micrograms per cubic meter
Source: California Air Resources Board, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, 2014.

The U.S. EPA uses data collected at permanent monitoring stations to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the U.S. EPA.

The U.S. EPA established new national air quality standards for ground-level ozone and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia

Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for ozone and particulate matter, was unconstitutional and an improper delegation of legislative authority to the U.S. EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The Court unanimously rejected industry arguments that the U.S. EPA must consider financial costs as well as health benefits in writing standards. The justices also rejected arguments that the U.S. EPA took too much lawmaking power from Congress when it set tougher standards for ozone and soot in 1997. Nevertheless, the court dismissed the U.S. EPA's policy for implementing new ozone rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the White House Office of Management and Budget (OMB) cleared the U.S. EPA to implement the 8-hour ground-level ozone standard. The U.S. EPA issued the proposed rule implementing the 8-hour ozone standard in April 2003. The U.S. EPA completed final 8-hour nonattainment status on April 15, 2004. The U.S. EPA revoked the 1-hour ozone standard on June 15, 2005, and lowered the 8-hour O_3 standard from 0.08 parts per million (ppm) to 0.075 ppm on April 1, 2008. The U.S. EPA issued the final $PM_{2.5}$ implementation rule in fall 2004. The U.S. EPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 micrograms per cubic meter ($\mu g/m_3$) and revoked the annual PM_{10} standard on December 17, 2006. The U.S. EPA issued final designations for the 2006 24-hour $PM_{2.5}$ standard on December 12, 2008.

Descriptions of the criteria pollutants follow.

Ozone. O_3 (smog) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases rather than being directly emitted. Ozone is a pungent, colorless gas typical of Southern California smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. Ozone levels peak during summer and early fall. The entire Basin is designated as a nonattainment area for the State 1-hour and 8-hour ozone standards. The U.S. EPA has officially designated the status for the Basin regarding the 8-hour ozone standard as "Extreme." The Basin has until 2024 to attain the federal 8-hour O_3 standard.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless odorless gas that can cause dizziness, fatigue, and impairment to central nervous system functions. The entire Basin is in attainment for the State standards for CO. The Basin is designated as an "Attainment/Maintenance" area under the federal CO standards.

Nitrogen Oxides. Nitrogen dioxide (NO_2), a reddish-brown gas, and nitric oxide (NO), a colorless odorless gas, is formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin is designated as nonattainment for the State NO_2 standard and as an "Attainment/Maintenance" area under the federal NO_2 standard.

Sulfur Dioxide. Sulfur dioxide (SO_2) is a colorless irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment for both federal and State SO_2 standards.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The Los Angeles County portion of the Basin was re-designated as nonattainment for the State and federal standards for lead in 2010.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (particulate matter less than 10 microns in diameter [PM_{10}]), derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle ($PM_{2.5}$) levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems such as asthma. The U.S. EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death; increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is a nonattainment area for the State PM_{10} and $PM_{2.5}$ standards and a nonattainment area for the federal $PM_{2.5}$ standards. The Basin was redesignated as attainment/maintenance for the federal PM_{10} standard in 2013.

Reactive Organic Compounds. Reactive organic compounds (ROCs; also known as ROGs and volatile organic compounds [VOCs]) are formed from combustion of fuels and evaporation of organic solvents. ROCs are not defined criteria pollutants but are a prime component of the photochemical smog reaction. Consequently, ROCs accumulate in the atmosphere more quickly during the winter when sunlight is limited and photochemical reactions are slower.

Sulfates. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The entire Basin is in attainment for the State standard for sulfates.

Hydrogen Sulfide. Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal

energy exploitation. In 1984, a California Air Resources Board (CARB) committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance. The state standard for outdoor levels of hydrogen sulfide is 30 parts per billion averaged over one hour (SCAQMD, 2015).The entire Basin is unclassified for the State standard for H_2S.

Visibility-Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. The entire Basin is unclassified for the State standard for visibility-reducing particles.

State Regulations/Standards. In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board) to establish the California Air Resources Board (CARB). The CARB coordinates and oversees both State and federal air pollution control programs in California. It also oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the U.S. EPA and local air districts. The CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution.

The CARB identified particulate emissions from diesel-fueled engines (diesel particulate matter [DPM]) as toxic air contaminants (TACs) in August 1998. Following the identification process, CARB was required by law to determine whether there is a need for further control. In September 2000, the CARB adopted the Diesel Risk Reduction Plan (Diesel RRP), which recommends many control measures to reduce the risks associated with DPM and to achieve the goal of 85 percent DPM reduction by 2020.

California Green Building Code. California Green Buildings Standards Code (Cal Green Code) (California Code of Regulations [CCR], Title 24, Part 11) was adopted by the California Building Standards Commission in 2010 and became effective in January 2011. The Code applies to all new constructed residential, nonresidential, commercial, mixed-use, and State-owned facilities, as well as schools and hospitals. Cal Green Code is comprised of Mandatory Residential and Nonresidential Measures and more stringent Voluntary Measures (TIERs I and II).

Mandatory Measures are required to be implemented on all new construction projects and consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The Cal Green Building Code refers to Title 24, Part 6 compliance with respect to energy efficiency; however, it encourages 15 percent energy use reduction over that required in Part 6. Voluntary Measures are optional, more stringent measures may be used by jurisdictions to enhance their commitment towards green and sustainable design and achievement of Assembly Bill (AB) 32 goals. Under TIERs I and II, all new construction projects are required to reduce energy consumption by 15 percent and 30 percent, respectively, below the baseline required under the

California Energy Commission (CEC), as well as implement more stringent green measures than those required by mandatory code.

Local Regulations and Policies. Local regulations and policies related to air quality are described below.

Regional Air Quality Planning Framework. The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state. The CARB is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for U.S. EPA approval. Significant authority for air quality control within the local air basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan. The SCAQMD and the Southern California Association of Governments (SCAG) are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. Every 3 years, the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The SCAQMD adopted the Final 2012 AQMP on December 7, 2012 and forwarded it to the CARB for review in February 2013. The 2012 AQMP includes the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches.

Currently, the SCAQMD is initiating an early development process for the 2016 AQMP, which will be a comprehensive and integrated Plan primarily focused on addressing the ozone standards. The Plan will be a regional and multi-agency effort (SCAQMD, CARB, SCAG, and U.S. EPA). State and federal planning requirements include developing control strategies, attainment demonstrations, reasonable further progress, and maintenance plans. The 2016 AQMP will incorporate the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, Regional Transportation Plan/Sustainable Communities Strategy, and updated emission inventory methodologies for various source categories.

City of Long Beach General Plan. The Air Quality Element (1996) of the Long Beach General Plan includes goals and polices related to air quality. The following goals and policies are applicable to the proposed project:

- ***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.*

d. Current Air Quality. The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the South Long Beach station (located at 1305 East Pacific Coast Highway), and its air quality trends are representative of the ambient air quality in the project area. The pollutants monitored at this station are PM_{10} and $PM_{2.5}$. Data for CO, O_3, NO_2, and SO_2 is from the second nearest station (North Long Beach, located at 3648 North Long Beach Boulevard) to the project site. Table 4.2-2 summarizes the ambient air quality levels measured at these stations between 2012-2014.

The pollutants that exceeded thresholds during the monitoring period were O_3, PM_{10} and $PM_{2.5}$. TheO_3 standard was exceeded one time in 2013; the PM_{10} standard was exceeded 1 time in 2012 and 2013 and twice in 2014; the PM2.5 standard was exceeded four times in 2012, one time in 2013, and two times in 2014

Table 4.2-2
Ambient Air Quality Data

Pollutant	2012	2013	2014
Ozone, ppm - Worst Hour	0.084	0.092	*
Number of days of State exceedances – 8 hour average (>0.07 ppm)	0	1	*
Carbon Monoxide, ppm - Worst 8 Hours	2.17	*	*
Number of days of State/Federal exceedances (>9.0 ppm)	0	0	0
Nitrogen Dioxide, ppm - Worst Hour	77.2	66.9	*
Number of days of State exceedances (>0.18 ppm)	0	0	0
Sulfur Dioxide, ppm – Worst Hour	0.003	0.001	*
Number of days of State exceedances (>0.04 ppm)	*	*	*
Particulate Matter <10 microns, $\mu g/m^3$ Worst 24 Hours	54	54	59
Number of samples of State exceedances (>50 $\mu g/m^3$)	1	1	2
Number of samples of Federal exceedances (>150 $\mu g/m^3$)	0	0	0
Particulate Matter <2.5 microns, $\mu g/m^3$ Worst 24 Hours	59.1	42.9	61.9
Number of samples of Federal exceedances (>35 $\mu g/m^3$)	4	1	2

Source: CARB, Annual Air Quality Data Summaries available at http://www.arb.ca.gov
- *Particulate Matter (<10 and <2.5) data from South Long Beach station.*
- *Ozone, Carbon Monoxide, Nitrogen Dioxide, and Sulfur Dioxide data taken from North Long Beach station.*

** Insufficient data available to determine the value*

4.2.2 Previous Environmental Review

The Long Beach Downtown Plan EIR (the "Downtown Plan EIR") examined the air quality setting of the project region and the potential impacts resulting from development under the

Downtown Plan. The Downtown Plan EIR concluded that the Downtown Plan would not increase the allowable density in the Downtown area; therefore, operational emissions associated with land use development on the site, including vehicle trip generation, was accounted for in the AQMP. However, it was also determined that construction and operational area- and mobile-source emissions from implementation of the Downtown Plan would result in or substantially contribute to emissions concentrations that exceed the national or California standards causing significant and unavoidable impacts.

The proposed project is within the parameters and growth forecasts of the Downtown Plan and would generate short-term air pollutant emissions associated with construction, as well as long-term operations, which would contribute to the significant and unavoidable impacts determined in the Downtown Plan EIR. Emissions have the potential to contribute to an existing project air quality violation or result in a cumulatively considerable net increase of criteria pollutants for which the region is in non-attainment.

Construction of the proposed project would be subject to Downtown Plan EIR Mitigation Measure AQ-1(a), which requires all heavy-duty (50 horsepower [hp] or more) offroad vehicles to be used during construction must implement Enhanced Exhaust Control Practices. Mitigation Measure AQ-1(b) requires individual projects within 1,500 feet of existing and proposed sensitive receptors to undergo project-specific construction-related air quality analysis. The project would also be subject to Mitigation Measure AQ-1(c), which requires individual projects to include specific provisions, such as temporary traffic controls as well as the use of 2010 or newer diesel trucks to reduce construction-related air quality impacts.

The project would also be subject to Downtown Plan EIR Mitigation Measure AQ-2 to reduce operational emissions. Mitigation Measure AQ-2 requires implementation of ride-share programs, development of secure bicycle parking areas, exceedance of Title 24 energy efficiency standards by 20 percent, inclusion of such measures as solar panels to achieve an additional 25 percent reduction in electricity use, and restrictions on diesel truck idling.

The Downtown Plan EIR determined that impacts from local mobile-source CO emissions associated with implementation of the proposed Downtown Plan would be less than significant. In addition, the Downtown Plan EIR determined that implementation of the Downtown Plan could result in the exposure of receptors to short- and long-term emissions of Toxic Air Contaminants (TACs) from onsite and offsite stationary and mobile sources. Impacts associated with the Port of Long Beach and offsite stationary sources were determined to be significant and unavoidable, while impacts related to short-term construction, long-term onsite stationary sources, and offsite mobile-sources were determined to be less than significant. The proposed project would be subject to the same general mitigation measures identified in the Downtown Plan EIR, specifically AQ-4(a) and AQ-4(b), which require location of TAC emitters away from existing and proposed onsite, sensitive receptors; implementation of idle-reduction strategies for diesel trucks; posting of signs; installation of high efficiency filter systems and mechanical ventilation systems in all proposed residences; and other measures specific to both TAC generators and TAC receptors to reduce risks to sensitive receptors. Development of the proposed project would potentially be subject to a component of Mitigation Measure AQ-4(a) that requires a project-level health risk assessment (HRA) for commercial land uses generating more than 100 trucks per day, or 40 trucks equipped with transportation refrigeration units (TRUs), within 1,000 feet of sensitive receptors.

The project includes the demolition of the former Long Beach Courthouse. The Long Beach Courthouse Demolition Project was studied in a Draft EIR (SCH# 2014051003) that was circulated in October and November of 2014, but was not certified. The Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to construction emissions exceeding SCAQMD's daily regional and localized construction thresholds would be less than significant with implementation of mitigation involving the development and implementation of an Air Quality Safety Plan, if the demolition occurs by implosion. The Long Beach Courthouse Demolition Project Draft EIR also determined that impacts related to TAC emissions would be less than significant with implementation of mitigation involving the development and implementation of an Air Quality Safety Plan, if the demolition occurs by implosion.

As stated in the Downtown Plan EIR, project construction activities associated with the development of onsite land uses could result in odorous emissions from diesel exhaust generated by construction equipment. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by diesel exhaust odors associated with project construction and the impact related to the Downtown Plan was determined to be less than significant. Downtown Plan EIR Mitigation Measure AQ-6 includes measures to control exposure of sensitive receptors to operational odorous emissions. Mitigation Measure AQ-6 requires the City to consider the odor-producing potential of land uses when reviewing development proposals; implementation of odor-control devices to mitigate the exposure of receptors to objectionable odors, where necessary; siting of loading docks and delivery areas away from sensitive receptors; and posting of signage in loading docks stating that diesel-powered delivery trucks must be shut off when not in in use for longer than five minutes. The proposed project would occur within the 25-year buildout assessed in the Downtown Plan EIR and would not include any uses expected to generate odors outside of what was considered in the Downtown Plan EIR.

4.2.3 Impact Analysis

a. Methodology and Significance Thresholds.

Methodology. The air quality analysis conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993). The handbook includes thresholds for emissions associated with both construction and operation of proposed projects.

The SCAQMD's current guidelines, included in its *CEQA Air Quality Handbook*, were adhered to in the assessment of potential short- and long-term air quality impacts of the proposed project. However, the air quality models identified in the *CEQA Air Quality Handbook* are outdated; therefore, CalEEMod Version 2013.2.2 was used to estimate regional air pollutant emissions associated with project construction and operation.

Construction is expected to occur in phases over approximately seven years beginning in 2016. The project includes demolition of the former Long Beach Courthouse, City Hall, and the Main Library. A total disturbance area of 15.87 acres split between the project components based on the project site plans was assumed in the model to calculate construction emissions. Grading operations would disturb an area of approximately nine acres and result in approximately 380,000 cubic yards (cy) of export and 68,200 cy of import. Due to construction phasing, the

project cannot use 68,200 cy of export as fill. Construction is expected to occur over four phases based on the applicant-provided construction schedule. Phase 1 includes demolition of the former Courthouse, grading, construction of City Hall, the Port Building, the new Library, Civic Block parking garage and associated architectural coating and paving. Phase 1 also includes the grading and construction of the residential building and parking garage within the Third and Pacific Block. Phase 2 includes architectural coating and paving for the residential building within the Third and Pacific Block. Phase 3 includes demolition of the existing Main Library, and grading and construction of Lincoln Park. Phase 4 includes demolition of the existing City Hall and grading and construction of the Center Block components, including associated architectural coating and paving.

Modeling assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measures AQ-1(a), AQ-1(b), AQ-1(c), AQ-2, GHG-1(b), and GHG-2(b) discussed in "Previous Environmental Review" and Section 4.4, *Greenhouse Gas Emissions and Climate Change*. Complete results from CalEEMod and assumptions can be viewed in Appendix B. All other values utilized in the modeling were based on applicable SCAQMD defaults for the Basin.

Both temporary construction emissions and long-term operation emissions were calculated using CalEEMod. The estimate of total daily trips associated with the proposed project and existing uses was based on the Traffic Impact Analysis prepared by Linscott, Law, and Greenspan, Engineers (LLG) in June 2015 and was calculated and extrapolated to derive total annual mileage in CalEEMod. Both construction and long-term emissions were analyzed based on the regional thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*.

Thresholds. Pursuant to the *State CEQA Guidelines*, air quality impacts related to the proposed project would be significant if the project would:

a) *Conflict with or obstruct implementation of the applicable air quality plan;*
b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);*
d) *Expose sensitive receptors to substantial pollutant concentrations; or*
e) *Create objectionable odors affecting a substantial number of people.*

As discussed in the Initial Study prepared for the project (Appendix A), onsite development would not generate objectionable odors that would affect a substantial number of people. No heavy industrial, agricultural or other uses typically associated with objectionable odors are proposed. Therefore, it is unlikely that the proposed project would generate objectionable odors affecting a substantial number of people. Consequently, threshold (e) related to objectionable odors is not discussed below.

Air Quality Management Plan Consistency. Criteria for determining consistency with the SCAQMD's AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's *CEQA Air Quality Handbook*, and include the following:

- *The project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.*
- *The proposed project will not exceed the assumptions in the AQMP based on the year of project buildout.*

Construction Emission Thresholds. The SCAQMD has developed specific numeric thresholds that apply to projects within the Basin. The SCAQMD currently recommends that impacts associated with projects with construction-related mass daily emissions that exceed any of the following emissions thresholds should be considered significant:

- *75 pounds per day of ROG*
- *100 pounds per day of NO_x*
- *550 pounds per day of CO*
- *150 pounds per day of SO_x*
- *150 pounds per day of PM_{10}*
- *55 pounds per day of $PM_{2.5}$*

Operational Emission Thresholds. The SCAQMD has also established the following significance thresholds for project operations within the Basin:

- *55 pounds per day of ROG*
- *55 pounds per day of NO_X*
- *550 pounds per day of CO*
- *150 pounds per day of SO_X*
- *150 pounds per day of PM_{10}*
- *55 pounds per day of $PM_{2.5}$*

Localized Significance Thresholds. In addition to the above thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the *CEQA Air Quality Handbook*. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project size, distance to the sensitive receptor and other factors. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation. LSTs have been developed for NO_X, CO, PM_{10} and $PM_{2.5}$. LSTs do not apply to mobile sources such as cars on a roadway (SCAQMD, 2003). As such, LSTs for operational emissions do not apply to onsite operational emissions as the majority of emissions would be generated by cars on the roadways.

LSTs have been developed for emissions within areas up to five acres in size, with air pollutant modeling recommended for activity within larger areas. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project area measures approximately 16 acres and is located in Source Receptor Area 4 (SRA-4) (SCAQMD, 2003). Based on the estimated construction schedule, it is assumed that construction activity at the project site

would generally occur within a five-acre area at any one time. The applicable LSTs for construction on a five acre site in SRA-4 are shown in Table 4.2-3. According to the SCAQMD's publication, *Final Localized Significant (LST) Thresholds Methodology*, the use of LSTs is voluntary, to be implemented at the discretion of local agencies.

LSTs are provided for receptors at a distance of 25 to 500 meters from the project site boundary. As described above, the nearest existing sensitive receptor is approximately 100 feet, or 30 meters, from the project site boundary; however, the project's proposed library would be located adjacent to on-going construction. The residential components of the project are concentrated on the Third and Pacific Block, which is located approximately 300 feet north of where construction on the remainder of the project site would occur, and on Center Block, operation of which would occur after all other components are constructed. Therefore, the proposed library would be the only sensitive receptor that would be located adjacent to project construction. According to the SCAQMD's LST methodology, projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.

Table 4.2-3
SCAQMD LSTs for Emissions in SRA-4

Pollutant	Allowable emissions as a function of receptor distance in meters from a five-acre site (lbs/day)				
	25	**50**	**100**	**200**	**500**
Gradual conversion of NO_x to NO_2	123	118	126	141	179
CO	1,530	1,982	2,613	4,184	10,198
PM_{10}	14	42	58	92	191
$PM_{2.5}$	8	10	18	39	120

Source: SCAQMD, website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2. Accessed: June 2015.

b. Project Impacts and Mitigation Measures.

Threshold	*Conflict with or obstruct implementation of the applicable air quality plan.*

Impact AQ-1 The proposed project would not directly or indirectly generate population growth beyond that anticipated in the Downtown Plan EIR and AQMP forecasts. Impacts relating to AQMP consistency are, therefore, Class III, *less than significant*.

A project may be inconsistent with the AQMP if it would generate population, housing or employment growth exceeding the forecasts used in the development of the AQMP. The 2012 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates local city general plans and the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) socioeconomic forecast projections of regional population, housing and employment growth.

The growth assumptions used in the AQMP are based on SCAG growth forecasts. Therefore, if the proposed project would not facilitate growth exceeding SCAG forecasts, then the project would be consistent with the assumptions in the AQMP (SCAG, 2012a).

As shown in Table 4.2-1, the RTP/SCS population growth forecast for Long Beach is 491,000 in 2020 and 534,100 in 2035 (SCAG, 2012b). SCAG's forecasts that Long Beach will have 175,600 housing units in 2020 and 188,900 housing units in 2035. SCAG estimates citywide employment for Long Beach at 176,000 jobs in 2020 and 184,800 jobs in 2035 (SCAG, 2012b).

Table 4.2-4
SCAG Population, Housing, Employment Forecasts for Long Beach

Year	Population	Housing	Employment
2020	491,000	175,600	176,000
2035	534,100	188,900	184,800

Source: SCAG, 2012b Adopted Growth Forecast

Long Beach currently has an estimated population of 470,292 (California Department of Finance, 2014). The proposed project would accommodate up to 780 new residential units within Long Beach. The City has approximately 2.82 persons per household (California Department of Finance, 2014). Development of the proposed project would therefore accommodate an estimated 2,200 residents (780 dwelling units x 2.82 people/dwelling unit). Based on this average, the project would add an estimated 2,200 residents, for a total City population of 472,492 residents (California Department of Finance, 2014). The 2,200 new residents would increase the City's population by 0.5%. The increase is well within the 63,808 residents forecast by SCAG to be added to the City between 2014 and 2035 (see Table 4.2-4). Direct population growth associated with the proposed project is therefore within SCAG's growth forecasts.

The City currently exceeds the 2020 SCAG forecast for housing with approximately 176,417 housing units (California Department of Finance, 2014). SCAG's housing forecast for Long Beach is 188,900 in 2035 (SCAG, 2012b). Housing units are expected to increase in the City by approximately 12,483 between 2014 and 2035. The project's proposed 780 units would account for approximately 6.2 percent of housing growth between 2014 and 2035 and would not exceed SCAG housing forecasts for 2035.

The project's commercial components would generate jobs onsite. As shown in Table 4.2-5, the proposed hotel, retail, and restaurant uses would accommodate an estimated 365 jobs. The Port Building, City Hall, and library would accommodate existing jobs that would simply be relocated to the new facilities.

Table 4.2-5
New Employees Accommodated by Proposed Project

Land Use	Area (sf)	Area (acres)	Employees per Acre	Total Employees
Retail	32,000	0.73	18.86	14
Restaurant[1]	8,000	0.18	25.76	5
Hotel	290,400	6.67	51.91	346
			Total[2]	**365**

Source: Table C-1, Range of Employment Densities (Employees Per Acre) by County (Southern California Association of Governments (SCAG), Employment Density Study Summary Report, October 31, 2001).
[1] Employee rate for "Other Retail/Services" in SCAG Table C-1 was used, as "Restaurant" is not listed.

SCAG estimated employment (jobs) in the City to be 168,100 in 2008. SCAG's employment growth forecast for Long Beach is 184,800 in 2035 (SCAG, 2012b). Therefore, jobs are expected to increase in the City by approximately 16,700 between 2008 and 2035. Consequently, the employment increase generated by the proposed project would account for approximately 2.2 percent of job growth between 2008 and 2035 and would not exceed SCAG employment forecasts.

The Downtown Plan EIR concluded that the Downtown Plan would not increase the allowable density in the Downtown area and therefore operational emissions associated with land use development on the site, including vehicle trip generation, were accounted for in the AQMP. As shown in Table 3-3 in Section 3, *Environmental Setting*, buildout of the Downtown Plan is expected to generate approximately 5,000 housing units. Implementation of the Downtown Plan is expected to generate 14,500 residents and approximately 5,200 jobs. The proposed project would account for approximately 15.6 percent of the housing units, 15.2 percent of the population increase, and 7 percent of the jobs anticipated in the Downtown Plan EIR. As such, the assumptions in the RTP/SCS about growth in the Downtown Plan Area and the City accommodates housing and population growth on the project site. Therefore, the project does would not conflict with the growth assumptions in the AQMP.

Mitigation Measures. Impacts would be less than significant and no mitigation measures would be required.

Level of Significance After Mitigation. Impacts related to AQMP consistency would be less than significant without mitigation.

Threshold	*Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
Threshold	*Expose sensitive receptors to substantial pollutant concentrations.*

Impact AQ-2 Onsite construction activity would generate temporary emissions. The Downtown Plan EIR determined that construction emissions associated with buildout of the Downtown Plan would result in Class I, significant and unavoidable impacts. The proposed project would contribute to this impact; however, project emissions would not exceed SCAQMD regional thresholds or LSTs. However, if demolition occurs by implosion, the project would result in significant impacts related to localized PM_{10} emissions and asbestos exposure without additional mitigation. Impacts would, therefore, be Class II, *less than significant with mitigation.*

Project construction would generate temporary air pollutant emissions. These impacts are associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction vehicles, in addition to ROG that would be released during the drying phase upon application of architectural coatings. Construction would generally consist of grading, construction of the proposed buildings, paving, and architectural coating.

The grading phase would involve the greatest concentration of heavy equipment use and the highest potential for fugitive dust emissions. This analysis assumes that 380,000 cubic yards of soil would be exported off-site and 68,200 cubic yards would be imported and both would be phased throughout the seven year construction schedule.

The project would be required to comply with SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the South Coast Air Basin. Therefore, the following conditions, which are required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

1. ***Minimization of Disturbance.*** *Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.*
2. ***Soil Treatment.*** *Construction contractors should treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least two times daily, preferably in the late morning and after work is done for the day.*
3. ***Soil Stabilization.*** *Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and*

watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.

4. ***Grading During High Winds.*** *Construction contractors should stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).*
5. ***Street Sweeping.*** *Construction contractors should sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.*

Construction emissions modeling for grading, building construction, paving, and application of architectural coatings is based on the overall scope of the proposed development and construction phasing, which is expected to begin in 2016 and extend through 2022. In addition to SCAQMD Rule 403 requirements, emissions modeling also accounts for the use of low-VOC paint (150 g/L for nonflat coatings) as required by SCAQMD Rule 1113 and Downtown Plan EIR Mitigation Measure AQ-1(c).

Table 4.2-6 shows estimated maximum daily emissions for each year of construction. The highest daily emissions would be in 2016 and 2017, during which demolition, grading, building, and architectural coating are expected to occur for the Civic Block, Third and Pacific Block and for the new library. With compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c), and GHG-1(b), construction emissions would not exceed SCAQMD regional thresholds for any criteria pollutant during any of the seven years of construction.

Table 4.2-6
Estimated Construction Maximum
Daily Air Pollutant Emissions (lbs/day)

Year	Emissions (lbs/day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2016	10.7	66.0	181.8	0.4	20.6	6.9
2017	33.3	60.7	172.1	0.4	23.8	7.6
2018	42.9	36.2	142.5	0.4	18.3	5.3
2019	42.3	63.8	168.2	0.4	21.3	7.2
2020	9.6	63.8	170.0	0.4	22.0	7.4
2021	64.2	25.3	108.2	0.3	18.0	5.1
2022	63.9	23.4	104.2	0.3	18.0	5.1
Maximum lbs/day[1]	**64.2**	**66.0**	**181.8**	**0.4**	**23.8**	**7.6**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: SCAQMD LST Spreadsheet for a 5-acre site and CalEEMod; see Appendix B for calculations and assumptions. Assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c), and GHG-1(b).
1. Maximum daily emissions include onsite and offsite emissions.

LSTs only apply to those emissions generated by onsite construction activities, such as emissions from onsite grading, and do not apply to offsite mobile emissions. The LST for sensitive receptors 25 meters from the project site were used to illustrate the closest receptor, which is the project's proposed library that would be located adjacent to ongoing construction. As indicated in Table 4.2-7, with compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c), and GHG-1(b), emissions generated by temporary construction activities would be below LSTs for NOx, CO, PM_{10} and $PM_{2.5}$.

Table 4.2-7
Estimated Construction Maximum Onsite
Daily Air Pollutant Emissions (lbs/day)

Year	Onsite Emissions (lbs/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2016	0.8	3.3	34.8	0.1	2.8	1.5
2017	24.5	3.3	34.8	0.1	2.8	1.5
2018	34.7	2.2	17.4	<0.1	<0.1	<0.1
2019	34.7	3.3	34.8	0.1	2.8	1.5
2020	0.8	3.3	34.8	0.1	2.8	1.5
2021	57.6	2.2	17.4	<0.1	<0.1	<0.1
2022	57.6	2.2	17.4	<0.1	<0.1	<0.1
Maximum Onsite lbs/day[1]	**234.7**	**3.3**	**34.8**	**0.1**	**2.8**	**1.5**
Local Significance Thresholds[2] (LSTs)	*n/a*	*123*	*1,530*	*n/a*	*14*	*8*
Threshold Exceeded?	**n/a**	**No**	**No**	**n/a**	**No**	**No**

Source: SCAQMD LST Spreadsheet for a 5-acre site and CalEEMod; see Appendix B for calculations and assumptions. Assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c, and GHG-1(b)).
1. Maximum daily onsite emissions from construction phases.
2. LSTs are for a five-acre project in SRA-4 within a distance of 25 meters from the site boundary

As indicated in Table 4.2-6 and Table 4.2-7, demolition during any phase of the project would not result in emissions that exceed SCAQMD regional or localized thresholds. However, the Long Beach Courthouse Demolition Project Draft EIR determined that because emissions during demolition by implosion could vary substantially depending on wind conditions, building materials, and the amount of explosive material involved, demolition of the former Courthouse, if done by implosion, could substantially increase downwind concentrations of PM_{10}, potentially exceeding SCAQMD's LSTs. In addition, considering the age of the former Courthouse, potentially hazardous materials such as asbestos-containing materials and surfaces painted with lead-based paint may be present. Because any exposure to asbestos is considered hazardous, the Long Beach Courthouse Demolition Project Draft EIR determined that demolition by implosion could result in a significant impact related to asbestos exposure.

The proposed project would include demolition of the former Courthouse, City Hall, and the Main Library. Due to the age of City Hall and the Main Library, all of which could potentially contain asbestos-containing materials and surfaces painted with lead-based paint. Because demolition could occur by implosion, impacts related to asbestos exposure and PM_{10} would be potentially significant.

Mitigation Measures. The following mitigation measure is required to reduce localized exposure to emissions of particulate matter and asbestos, if existing buildings are demolished by implosion.

AQ-2 **Air Quality Safety Plan.** If demolition occurs by implosion, the City shall approve an Air Quality Safety Plan that protects public health. The Plan shall be prepared with and approved by the South Coast Air Quality Management District. Public safety measures include:

- *A radius around the project site in which the public is prevented from being outdoors;*
- *Advanced notification of potential particulate matter and asbestos exposure to all land uses within 1,000 feet of the project site;*
- *Notice that windows should be closed at all buildings within the safety radius during the implosion until the City has provided notice that particulate matter and asbestos concentrations have reached background concentrations;*
- *Air quality monitoring during the day of the implosion to confirm when particulate matter and asbestos concentrations have reached background concentrations.*

Significance After Mitigation. Mitigation Measure AQ-2 would ensure that the public would not be exposed to significant particulate matter and asbestos concentrations. A safety radius preventing outside activity would be kept in place until air monitoring demonstrates that concentrations do not exceed pre-implosion background concentrations. Therefore, the proposed project would result in a less than significant impact related to particulate matter and asbestos exposure.

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

Impact AQ-3 **Operation of the proposed project would generate air pollutant emissions in the long-term. Emissions would not exceed SCAQMD operational significance thresholds for any criteria pollutants, except ROG. The Downtown Plan EIR determined that operational emissions associated with buildout of the Downtown Plan would result in a Class I, significant and unavoidable impact. The proposed project would contribute to this impact and would be a Class I, *significant and unavoidable* impact.**

Long-term air pollutant emissions are those associated with stationary sources and mobile sources involving any project-related changes. The proposed project would result in an increase in both stationary and mobile source emissions. Stationary source emissions would come from additional natural gas consumption for onsite buildings and electrical demand. Mobile source

emissions would come from project-related vehicle trips. Project-related vehicle trips are largely dependent on the number of residences. The net increase in long-term operational emissions associated with the proposed project, calculated using CalEEMod, is shown in Table 4.2-8. The net increase of NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$ would be less than the corresponding SCAQMD daily emission thresholds. However, the net increase of ROG emissions would exceed the SCAQMD daily emissions threshold. Therefore, project-related long-term impacts to regional air quality would be significant.

Table 4.2-8
Long-Term Operational Emissions (lbs/day)

Emission Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Project Emissions						
Area	61.4	0.7	64.8	<0.1	0.4	0.4
Energy	0.7	6.3	5.1	<0.1	0.6	0.6
Mobile	53.1	99.4	589.9	2.0	133.7	37.4
Total Project Emissions	**115.2**	**106.3**	**521.1**	**1.3**	**89.4**	**25.6**
Existing Emissions						
Area	18.2	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	0.2	1.5	1.3	<0.1	0.1	0.1
Mobile	35.0	78.5	323.7	0.6	55.3	15.7
Total Existing Emissions	**53.4**	**80.1**	**325.1**	**0.6**	**55.4**	**15.8**
Net Emissions (Project – Existing)	***61.8***	***26.2***	***196***	***0.7***	***34***	***9.8***
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	*Yes*	*No*	*No*	*No*	*No*	*No*

Source: See Appendix B for CalEEMod calculations. Assumed compliance with SCAQMD's Healthy Hearths Initiative Rule 445 and Architectural Coating Rule 1113,and Downtown Plan EIR Mitigation Measure AQ-2 and GHG-2(b).
Note: Totals may not add up due to rounding.

Mitigation Measures. The following mitigation measures are required to reduce emissions of ROG during operation of the proposed project to the maximum extent feasible.

AQ-3 **Low-VOC Paint.** The project applicant shall require all development operator(s) to use low-VOC paint on all interior and exterior surfaces. Paint should not exceed 50 g/L for all interior surfaces and exterior surfaces.

Significance After Mitigation. As shown in Table 4.2-9, implementation of Mitigation Measure AQ-3 would reduce ROG emissions to the maximum extent feasible. However, project-related long-term impacts to regional air quality would remain significant and unavoidable.

Table 4.2-9
Long-Term Operational Emissions (lbs/day) with Mitigation Measure AQ-3

Emission Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Project Emissions						
Area	**56.9**	0.7	64.8	<0.1	0.4	0.4
Energy	**0.7**	6.3	5.1	<0.1	0.6	0.6
Mobile	**53.1**	99.4	589.9	2.0	133.7	37.4
Total Project Emissions	**110.7**	**106.3**	**521.1**	**1.3**	**89.4**	**25.6**
Existing Emissions						
Area	18.2	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	0.2	1.5	1.3	<0.1	0.1	0.1
Mobile	35.0	78.5	323.7	0.6	55.3	15.7
Total Existing Emissions	**53.4**	**80.1**	**325.1**	**0.6**	**55.4**	**15.8**
Net Emissions (Project – Existing)	***57.3***	***26.2***	***196***	***0.7***	***34***	***9.8***
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	*Yes*	*No*	*No*	*No*	*No*	*No*

Source: See Appendix B for CalEEMod calculations. Assumed compliance with SCAQMD's Healthy Hearths Initiative Rule 445 and Architectural Coating Rule 1113,and Downtown Plan EIR Mitigation Measure AQ-2 and GHG-2(b).
Note: Totals may not add up due to rounding.

Threshold	*Expose sensitive receptors to substantial pollutant concentrations.*

Impact AQ-4 **Project traffic would generate CO emissions that have the potential to create high concentrations of CO, or CO hotspots. However, project traffic would not cause the level of service (LOS) of an intersection to change to E or F, nor would it increase the volume to capacity ratio (V/C) by two percent or more for intersections rated D or worse. Therefore, localized air quality impacts related to CO hotspots would be Class III, *less than significant*.**

Areas with high vehicle density, such as congested intersections, have the potential to create high concentrations of CO, known as CO hotspots. A project's localized air quality impact is

considered significant if CO emissions create a hotspot where either the California one-hour standard of 20 ppm or the federal and state eight-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (level of service [LOS] E or worse). Pursuant to SCAQMD guidance, a CO hotspot analysis should be conducted for intersections where the proposed project would have a significant impact at a signalized intersection, causing the LOS to change to E or F, or when the volume to capacity ratio (V/C) increases by two percent or more as a result of a proposed project for intersections rated D or worse (SCAQMD, 2003). As discussed in Section 4.6, *Transportation and Traffic*, local intersections currently operate at LOS C or better during peak hours (Shane Green, LLG, personal communication, June 2015). Under cumulative conditions in 2020, when portions of the project would be operational, one intersection (Magnolia Avenue at Ocean Boulevard) would operate at LOS D. The proposed project is forecast to result in a net increase of 671 vehicle trips during the a.m. peak hour and a net increase of 552 vehicles trips during the p.m. peak hour (Shane Green, LLG, personal communication, June 2015). Under cumulative conditions in year 2020, the addition of project traffic would not cause the LOS of any intersections to change to E or F, nor would it increase the V/C by two percent or more at an intersection rated as LOS D under existing conditions. In addition, as shown in Table 4.2-8, project operational CO emissions are well below SCAQMD regional thresholds. Therefore, the proposed project would not result in a CO hotspot and impacts would be less than significant.

Mitigation Measures. Mitigation would not be required since impacts would be less than significant.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Threshold	*Expose sensitive receptors to substantial pollutant concentrations.*

Impact AQ-5 **The Downtown Plan EIR determined that implementation of the Downtown Plan could result in exposure of receptors to short- and long-term emissions of toxic air contaminants (TACs) from onsite and offsite stationary and mobile sources. Impacts from Port of Long Beach and offsite stationary sources, and onsite mobile sources were determined by the Downtown Plan EIR to be Class I, significant and unavoidable. Operation of the proposed project would increase mobile source emissions of TACs in the Downtown Plan Area, however, fewer than 100 trucks and 40 trucks equipped with transportation refrigeration units (TRUs) per day would be accommodated by the proposed project. Therefore, impacts from mobile source emissions of TACs would be Class III, *less than significant*; however, because the project would place residential uses within the Downtown Plan Area, impacts from Port of Long Beach and offsite stationary sources would remain Class I, *significant and unavoidable*.**

Within the Downtown Plan Area, mobile sources of TAC emissions would be associated with the operation of diesel-powered delivery trucks at loading docks and delivery areas of

commercial land uses. Some sensitive land uses within the project area could be located within 100 feet of commercial uses. Operational activities that require the use of diesel-fueled vehicles, such as delivery areas or loading docks, could expose nearby sensitive receptors to diesel PM emissions. The diesel PM emissions generated by these uses would be produced primarily at discrete locations on a regular basis. Idling trucks at these locations, including Transportation Refrigeration Units (TRUs), could result in the exposure of nearby residents to increased diesel PM levels on a recurring basis.

The California Air Resources Board's (CARB's) *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) recommends avoiding the siting of new commercial trucking facilities that accommodate more than 100 trucks per day, or 40 trucks equipped with TRUs, within 1,000 feet of sensitive receptors. The types of tenants that would occupy commercial spaces and the number of trucks that would visit these facilities on any given day was not known at the time the Downtown Plan was analyzed in the Downtown Plan EIR. However, it was anticipated that the types of commercial uses proposed for the Downtown Plan Area would not involve large-scale trucking operations. For the purposes of the Downtown Plan, it was not anticipated that the combination of commercial land uses proposed in the Downtown Plan Area would exceed these screening limits.

Nonetheless, Downtown Plan EIR Mitigation Measure AQ-4(a) requires a project-level health risk assessment (HRA) for commercial land uses that accommodate more than 100 trucks per day, or 40 trucks equipped with TRUs, within 1,000 feet of sensitive receptors. The project site is within 1,000 feet of sensitive receptors and includes proposed sensitive receptors. In addition, the proposed project includes commercial components, such as proposed hotel, retail, and restaurant uses, as well as residential, library, and government office land uses.

Linscott, Law, and Greenspan, Engineers estimates that approximately 0.5 percent of residential vehicle trips would be truck trips and one percent of the remaining project vehicle trips would be truck trips (Shane Green, LLG, personal communication, June 2015). Based on these estimates, the project would accommodate approximately 84 trucks per day (see Table 4.2-10). Assuming that all truck trips to the restaurant are by trucks equipped with TRUs, the project would accommodate approximately 5 trucks with TRUs per day. Based on these conservative estimates, the proposed project would accommodate fewer than 100 trucks per day and fewer than 40 trucks with TRUs per day; therefore, the project's impact on mobile source TAC emissions would be less than significant and a project-level HRA is not warranted.

Table 4.2-10
Estimated Project Truck Trips

Land Use	Daily Trips	Truck Trip Percentage	Total Truck Trips (Inbound/Outbound)	Total Trucks[1]
Third and Pacific Block				
Residential	1,176	0.5%	6	3
Civic Block				
City Hall	2,793	1%	28	14
Port Building	2,554	1%	26	13
Lincoln Park and New Library Block				
Main Library	3,533	1%	35	18
Lincoln Park	111	1%	1	1
Center Block				
Residential	2,821	0.5%	14	7
Hotel	1,552	1%	16	8
Retail	3,076	1%	31	15
Restaurant	966	1%	10	5
			Total Truck Trips	84

Source: LLG, Traffic Impact Analysis, June 2015 (see Appendix E)
1. Total trucks include one inbound and one outbound trip. Therefore, total trucks equal total truck trips divided by two.

The Downtown Plan EIR determined that the cumulative carcinogenic risk in the Downtown Plan Area, including risk from emissions sources at the Port of Long Beach and other TAC sources in the surrounding area, would exceed SCAQMD's recommended threshold for sensitive receptors (maximum incremental risk of ten per one million population or a 0.00001 probability). To provide a perspective on risk, the American Cancer Society (2007) reports that in the U.S., men have a one in two chance (0.5 probability) and women about one in three chance (0.3) probability of developing cancer during a lifetime, with one in four deaths (0.23) in the U.S. attributed to cancer. Given this background carcinogenic risk level in the general population, application of a ten per one million excess risk limit means that the contribution from a toxic hazard should not cause the resultant cancer risk for the exposed population to exceed 0.50001 for men and 0.33334 for women. The cumulative carcinogenic risk in the Downtown Plan Area ranges from 1,201 to 2,904 potential cases per one million population (0.01201 to 0.02904 probability).

Although TAC emissions from the Port of Long Beach would be reduced over time with implementation of the San Pedro Bay Ports Clean Air Action Plan, the Downtown Plan EIR determined that the siting of residential uses within the Downtown Plan Area would result in a significant and unavoidable impact with regard to exposure of sensitive receptors to TAC emission sources.

In order to reduce exposure of sensitive receptors to operational emissions of TACs, the proposed project would be subject to Downtown Plan EIR Mitigation Measure AQ-4(a), which requires loading docks to be located away from existing and proposed onsite sensitive receptors; the use of idle-reduction strategies, such as electrification of truck parking, for proposed commercial uses that may host diesel trucks; and signage in all loading dock areas to indicate that diesel-powered delivery trucks must be shut off when not in use for longer than five minutes on the premises. The proposed project would also be required to implement Downtown Plan EIR Mitigation Measure AQ-4(b), which includes installation of mechanical ventilation systems and filter systems with high Minimum Efficiency Reporting Value (MERV) ratings for removal of small particles (such as 0.3 micron) at all air intake points in proposed residential units to reduce exposure to TACs. Filters with a MERV rating of 16 are capable of removing parcels 0.3 micron in size and have efficiency rates exceeding 95 percent. In addition, Downtown Plan EIR Mitigation Measure AQ-4(b) requires installation of heating, ventilation, and air conditioning (HVAC) systems to maintain all residential units under positive pressure at all times, as well as the development of on-going education and maintenance plans for the HVAC filtration systems. Downtown Plan EIR Mitigation Measure AQ-4(b) also requires, to the extent feasible, sensitive receptors to be located as far from the Port of Long Beach as possible.

The cumulative carcinogenic risk calculated in the Downtown Plan EIR for the Downtown Plan Area (1,201 to 2,904 potential cases per one million population) is based on exposure to outdoor air 24 hours per day, but the U.S. EPA Exposure Factors Handbook indicates that the recommended daily activity pattern includes 16.4 hours per day (approximately 68 percent) spent inside and 2 hours per day (approximately 8 percent) spent outside (Volume III, Table 15-176 Summary of Recommended Values for Activity Factors). The remaining daily time is spent offsite (approximately 23 percent). Assuming that 32 percent of time not spent indoors is spent in the Downtown Plan Area, implementation of Downtown Plan EIR Mitigation Measure AQ-4(b)'s high efficiency air filter systems would reduce cumulative carcinogenic risk by nearly 68 percent; that is cumulative carcinogenic risk would be approximately 817 to 1,975 potential cases per one million population (68 percent of 1,201 to 2,904 potential cases per one million population). Nonetheless, this rate would exceed SCAQMD's recommended threshold for sensitive receptors (maximum incremental risk of ten per one million population or a 0.00001 probability).

Mitigation Measures. Downtown Plan EIR Mitigation Measures AQ-4(a) and AQ-4(b) would reduce project impacts related to exposing sensitive receptors to TAC emissions from the Port of Long Beach and other sources to the maximum extent feasible.

Significance After Mitigation. Implementation of Downtown Plan EIR Mitigation Measures AQ-4(a) and AQ-4(b) would reduce concentrations of TACs that proposed sensitive receptors would be exposed to for time spent indoors. Implementation of the above mitigation measures would also disclose to those considering residing on the project site the potential risks involved with residing in the Downtown Plan Area. The mitigation would not reduce exposure of sensitive receptors to substantial pollutant concentrations for time spent outdoors. Mitigation measures would reduce impacts to the maximum extent feasible; however, the project would expose sensitive receptors to TAC emissions from the Port of Long Beach and other TAC sources and would remain significant and unavoidable.

c. Cumulative Impacts. The South Coast Air Basin is a non-attainment area for the federal standards for ozone, $PM_{2.5}$ and lead and the state standards for ozone, PM_{10}, $PM_{2.5}$, NO_2 and lead. Any growth within the Los Angeles metropolitan area would contribute to existing exceedances of ambient air quality standards when taken as a whole with existing development. The Downtown Plan EIR determined that implementation of the Downtown Plan would result in direct significant and unavoidable cumulative air quality impacts. As development of the project site was anticipated in the Downtown Plan EIR, the proposed project would contribute to the Downtown Plan's cumulative air quality impacts and would be significant and unavoidable.

4.3 CULTURAL RESOURCES

The information and analysis presented in this section is based on a Cultural Resources Study prepared for the proposed project by Rincon Consultants, Inc. in June 2015, included as Appendix C of this EIR.

4.3.1 Setting

a. Historical Background.

Prehistory. The project site is located in the southern coastal region of California (Jones and Klar 2007). Wallace (1955, 1978) devised a prehistoric chronology for the southern California coastal region which has been modified and improved by researchers over recent decades (Byrd and Raab 2007; Koerper and Drover 1983; Koerper et al. 2002; Mason and Peterson 1994). The chronological sequence is generally divided into four periods: Early Man, Milling Stone, Intermediate, and Late Prehistoric. The Early Man Horizon (ca. 10,000-6,000 B.C.) is represented by numerous sites identified along the mainland coast and Channel Islands (c.f., Erlandson 1991; Johnson et al. 2002; Jones and Klar 2007; Moratto 1984; Rick et al. 2001). Early Man Horizon sites are generally associated with a greater emphasis on hunting than later horizons, though recent data indicates that the economy was a diverse mixture of hunting and gathering, including a significant focus on aquatic resources (Jones and Klar 2007). The Millingstone Period, (6000-3000 B.C.), is characterized by an ecological adaptation to collecting suggested by the appearance and abundance of well-made milling implements (Wallace 1955; Jones and Klar 2007). A broad spectrum of food resources were consumed, including small and large terrestrial mammals, sea mammals, birds, shellfish, fishes, and other littoral and estuarine species, yucca, agave, seeds, and other plant products (Reinman 1964; Kowta 1969). The Intermediate Horizon (3000 B.C. – A.D. 500) is characterized by a shift toward a hunting and maritime subsistence strategy. A noticeable trend occurred toward greater adaptation to local resources including a broad variety of fish, land mammal, and sea mammal along the coast. Tool kits for hunting, fishing, and processing food and other resources reflect this increased diversity, with flake scrapers, drills, various projectile points, and shell fishhooks being manufactured. An increase in mortars and pestles became more common, indicating an increasing reliance on acorn (Glassow et al. 1988; True 1993). The Late Prehistoric Horizon (A.D. 500 - Historic Contact) saw further increase in the diversity of food resources (Wallace 1955, 1978). More classes of artifacts were observed during this period and high quality exotic lithic materials were used for small, finely worked projectile points associated with the bow and arrow (Wallace 1955).

Ethnography. The project site lies within an area traditionally occupied by the Native American group known as the Gabrielino. The name Gabrielino was applied by the Spanish to those natives that were attached to Mission San Gabriel (Bean and Smith 1978). Today, most contemporary Gabrielino prefer to identify themselves as Tongva (King 1994). Tongva territory included the Los Angeles basin and southern Channel Islands as well as the coast from Aliso Creek in the south to Topanga Creek in the north (Bean and Smith 1978). The Tongva language belongs to the Takic branch of the Uto-Aztecan language family, which can be traced to the Great Basin region (Mithun 2004).

The Tongva established large permanent villages and smaller satellite camps throughout their territory. Society was organized along patrilineal non-localized clans, a common Takic pattern O'Neil 2002). Tongva subsistence was oriented around acorns supplemented by roots, leaves, seeds, and fruits of a wide variety of plants. Meat sources included large and small mammals, freshwater and saltwater fish, shellfish, birds, reptiles, and insects (Bean and Smith 1978; Langenwalter et al. 2001; Kroeber 1925; McCawley 1996). Tongva employed a wide variety of tools and implements to gather and hunt food. The digging stick, the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks were common tools. Like the Chumash, the Tongva made oceangoing plank canoes (known as ti'at) capable of holding 6 to 14 people and used for fishing, travel, and trade between the mainland and the Channel Islands (Blackburn 1963; McCawley 1996).

History. Spanish exploration of California began when Juan Rodriguez Cabrillo led the first European expedition into the region in 1542. For more than 200 years after his initial expedition, Spanish, Portuguese, British, and Russian explorers sailed the California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968, Rolle 2003). In 1769, Gaspar de Portolá and Franciscan Father Junipero Serra established the first Spanish settlement in what was then known as Alta (upper) California at Mission San Diego de Alcalá. This was the first of 21 missions erected by the Spanish between 1769 and 1823. It was during this time that initial Spanish settlement of the project vicinity began.

On September 8, 1771, Fathers Pedro Cambón and Angel Somera established the Mission San Gabriel de Arcángel near the present-day city of Montebello (Johnson et al. 1972). In 1775, the mission was moved to its current location in the City of San Gabriel due to better agricultural lands. The establishment of Mission San Gabriel marked the first sustained European occupation of the Los Angeles Basin. The mission, despite a slow start partially due to misconduct by Spanish soldiers, eventually became so prosperous it was known as "The Queen of the Missions" (Johnson et al. 1972).

In addition to Mission San Gabriel, the Spanish also established a pueblo (town) in the Los Angeles Basin known as El Pueblo de la Reina de los Angeles de la Porciúncula in 1781. This pueblo was one of only three pueblos established in Alta California and eventually became the City of Los Angeles (Robinson 1979). It was also during this period that the Spanish crown began to deed ranchos to prominent citizens and soldiers. To manage and expand their herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927a). Native populations were also affected by the missions who were responsible for their administration as well as converting the population to Christianity (Engelhardt 1927b). The increased European presence during this period led to the spread of disease which devastated the native populations (McCawley 1996). In 1784, the Spanish King Carlos III granted Manuel Nieto the Rancho Los Nietos land grant. This grant was one of the first and largest of the land grants and encompassed much of present day Los Angeles and Orange counties (Shumway 2007).

The Mexican Period commenced when news of the success of the Mexican War of Independence (1810-1821) against the Spanish crown reached California in 1822. This period saw the privatization of mission lands in California with the passage of the Secularization Act of 1833. This Act federalized mission lands and enabled Mexican governors in California to distribute former mission lands to individuals in the form of land grants. Successive Mexican

governors made more than 700 land grants between 1822 and 1846, putting most of the state's lands into private ownership for the first time (Shumway 2007). In 1834, Governor Jose Figueroa declared the Rancho Los Nietos grant to be partitioned into six smaller ranchos. The Long Beach area was divided into two land grants, Rancho Los Cerritos and Rancho Los Alamitos, the boundary for these two grants was Signal Hill (Stewart 2013). The Rancho Los Cerritos grant was located on the western side of the boundary and included the current project site. Later in 1834, Jonathon Temple purchased the Los Cerritos land grant. During this time, the population of the pueblo of Los Angeles nearly doubled, rising from 650 to 1,250 between 1822 and 1845 (Weber 1982). In 1842, gold was discovered by Francisco Lopez in Placerita Canyon on a rancho associated with Mission San Fernando (Guinn 1977, Workman 1935).

The Mexican Period for the Los Angeles region ended in early January 1847. Mexican forces fought and lost to combined U.S. Army and Navy forces in the Battle of the San Gabriel River on January 8 and in the Battle of La Mesa on January 9 (Nevin 1978). On January 10, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California Andrés Pico surrendered all of Alta California to U.S. Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for conquered territory including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. Settlement of the Los Angeles region increased dramatically in the early American Period. Los Angeles County was established on February 18, 1850, one of 27 counties established in the months prior to California becoming the 31st state.

The discovery of gold in northern California in 1848 led to the California Gold Rush, despite the aforementioned 1842 discovery in Placerita Canyon (Guinn 1977, Workman 1935). By 1853, the population of California exceeded 300,000. Thousands of settlers and immigrants continued to immigrate to the state, particularly after the completion of the First Transcontinental Railroad in 1869. The U.S. Congress in 1854 agreed to let San Pedro become an official port of entry. By the 1880s, the railroads had established networks from the port and throughout the county, resulting in fast and affordable shipment of goods, as well as a means to transport new residents to the booming region (Dumke 1944). New residents included many health-seekers drawn to the area by the fabled climate in the 1870s–1880s.

Many ranchos in Los Angeles County were sold or otherwise acquired by Americans in the mid-1800s, and most were subdivided into agricultural parcels or towns. Nonetheless, ranching retained its importance and, by the late 1860s, Los Angeles was one of the top dairy production centers in the West (Rolle 2003). By 1876, the county had a population of 30,000 (Dumke 1944). Ranching was supplanted by farming and urban professions during the late nineteenth century due to droughts and increased population growth.

European settlement of what was later to become the City of Long Beach began as early as 1784 as part of a land grant given to Manuel Nieto that became Rancho Los Nietos (Shumway 2007). After Nieto's death in 1804 much of the land grant remained intact and was managed by his heirs. In 1834, however the Governor declared Rancho Los Nietos should be divided into six smaller ranchos. Two of these ranchos form the majority of what is now the City of Long Beach.

The current project site is within former Rancho Los Cerritos lands, which was inherited by Nieto's daughter Manuela Cota. Following Manuela's death, Rancho Los Cerritos was sold to Jonathan Temple, a Los Angeles entrepreneur (City of Long Beach 2010).

During the 1860s, a massive drought decimated much of the cattle ranching in the Long Beach area causing several ranches to fall into debt (Stewart 2013). In 1866, Temple sold Rancho Los Cerritos to Thomas and Benjamin Flint and Lewellyn Bixby. The Bixby family bought Rancho Los Alamitos, combining the two and forming the Bixby Ranch. Beginning in the 1870s, Flint, Bixby, and Co., began selling the land. By 1884, Long Beach, then known as both the American Colony and Wilmore City, covered the southwestern portion of Rancho Los Cerritos. The failed Wilmore City development was purchased in 1884 by Pomeroy and Mills, a San Francisco real-estate company, and the community began to grow under its new name of Long Beach. Expansion of transportation networks sparked further growth and in 1888 Long Beach was incorporated as a city with a population of 800. Long Beach became a major producer of oil beginning in the 1920s with the drilling of the Signal Hill Oil Field. By 1950 the field produced more than 750 million barrels of crude, averaging more than 500,000 barrels of oil per acre, making it one of the richest oil fields in terms of production per acre in the world (Franks and Lambert 1985). Long Beach also became a tourist destination, transportation center, and shipping industry hub with the construction of the wharf and multiple piers. Today, Long Beach has the busiest port on the West Coast, just east of the former port of San Pedro (now the Port of Los Angeles) and is one of the most populous cities in California (City of Long Beach, 2010).

b. Regulatory Setting.

State.

California Register of Historical Resources. The California Register of Historical Resources (California Register, or CRHR) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify, evaluate, and protect California's historical resources, and indicates which properties are to be protected from substantial adverse change (Pub. Resources Code, Section 5024.1(a)). The California Register is administered through the State Office of Historic Preservation (SHPO), which is part of the California State Parks system.

A cultural resource is evaluated under four California Register criteria to determine its historical significance. A resource must be significant at the local, state, or national level in accordance with one or more of the following criteria set forth in the *CEQA Guidelines* at Section 15064.5(a)(3):

1. *It is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;*
2. *It is associated with the lives of persons important in our past;*
3. *It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or*
4. *It has yielded, or may be likely to yield, information important in prehistory or history.*

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource according to SHPO publications. The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association." Archaeological resources can sometimes qualify as "historical resources" [*CEQA Guidelines*, Section 15064.5(c)(1)]. In addition, Public Resources Code Section 5024 requires consultation with SHPO when a project may impact historical resources located on State-owned land.

Two other programs are administered by the state: California Historical Landmarks and California "Points of Historical Interest." California Historical Landmarks are buildings, sites, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value. California Points of Historical Interest are buildings, sites, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value.

Native American Consultation. Prior to the adoption or amendment of a general plan proposed on or after March 1, 2005, Government Code Sections 65352.3 and 65352.4 require a city or county to consult with local Native American tribes that are on the contact list maintained by the Native American Heritage Commission. The purpose is to preserve or mitigate impacts to places, features, and objects described in Public Resources Code Sections 5097.9 and 5097.993 (Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property) that are located within a city or county's jurisdiction. The proposed project does not require a general plan amendment.

Human Remains. Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. *CEQA Guidelines* Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Public Resources Code Section 5097.5. California Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are

defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

CEQA. CEQA requires that historical resources and unique archaeological resources be taken into consideration during the CEQA review process (Public Resources Code, Section 21083.2). If feasible, adverse effects to the significance of historical resources must be avoided, or significant effects mitigated [CEQA Guidelines Section 15064.5(b)(4)].

CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1). A *historical resource* is a resource listed, or determined to be eligible for listing, in the CRHR; a resource included in a local register of historical resources; or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (State CEQA Guidelines, Section 15064.5[a][1-3]).

A resource shall be considered historically significant if it meets any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

According to CEQA, all buildings constructed over 50 years ago and that possess architectural or historical significance may be considered potential historic resources. Most resources must meet the 50-year threshold for historic significance; however, resources less than 50 years in age may be eligible for listing on the CRHR if it can be demonstrated that sufficient time has passed to understand their historical importance.

Local.

City of Long Beach General Plan. The Historic Preservation Element of the Long Beach 2030 General Plan includes goals and policies to protect archaeological and historical resources. The goals and policies applicable to the proposed project are presented below.

Goal 1	*Maintain and support a comprehensive, citywide historic preservation program to identify and protect Long Beach's historic, cultural, and archaeological resources.*
Policy 1.1	*The City shall comply with City, State, and Federal historic preservation regulations to ensure adequate protection of the City's cultural, historic, and archaeological resources.*

Policy 1.2	*The City shall maintain its status as a Certified Local Government (CLG) and ensure that CLG requirements are implemented as the key components of the City's historic preservation program.*
Policy 1.4	*The City shall use public input to help shape the historic preservation program.*
Goal 2	*Protect historic resources from demolition and inappropriate alterations through the use of the City's regulatory framework, technical assistance, and incentives.*
Policy 2.5	*The City shall enforce historic preservation codes and regulations.*
Policy 2.6	*The City shall implement and promote incentives for historic preservation.*
Policy 2.7	*The City shall encourage and support public, quasi-public, and private entities in local preservation efforts, including the designation of historic resources and the preservation of designated resources.*
Goal 5	*Integrate historic preservation policies into City's community development, economic development, and sustainable-city strategies.*
Policy 5.2	*The City shall consider historic preservation as a basis for neighborhood improvement and community development.*
Policy 5.3	*The City shall consider historic preservation goals and policies when making community and economic development decisions and determining sustainable-city strategies.*
Policy 5.7	*The City shall promote historic preservation as a sustainable land use practice.*

c. Existing Conditions.

Cultural. A records search was conducted for the project site at the California Historical Resources Information System (CHRIS), South Central Coastal Information Center at California State University, Fullerton. Seven cultural resources have been previously recorded and mapped within 0.25 mile of the project site. One resource is an historic archaeological site and six are historic built environment resources; none of these are located within the project site. As indicated by CHRIS, an additional 48 unmapped properties are located within 0.25 mile of the project site, and consist of historic-era buildings, structures, and objects. Of the 56 total previously recorded cultural resources, three are listed in the NRHP, four have been determined eligible for listing in the NRHP and are listed in CRHR, seven appear eligible for listing in the NRHP, one is recommended eligible for the CRHR, and 25 are recognized as historically significant by the City.

Eleven cultural resources studies have been previously conducted within 0.25 mile of the project site. Of these, two were conducted within at least a portion of the project site (LA-02399 and LA-10527); however, neither identified cultural resources within the project site. An additional 14 unmapped studies were also conducted within the Long Beach quadrangle. Most of these studies are overview reports encompassing very large areas and all appear to be located outside of the project site.

Although not identified in the records search, one previously recorded historic resource was identified within the project site: the Old Long Beach Courthouse building constructed in 1960 by architects Francis J. Heusel and Kenneth S. Wing. The Old Courthouse was previously evaluated and found individually eligible for historic significance on two occasions: in 2006, it was found eligible for local listing as a City of Long Beach Historic Landmark and in 2008 the property was found eligible for listing in the California Register of Historical Resources (CRHR). The Old Long Beach Courthouse appears eligible for listing in the CRHR as an individual resource under Criterion 3 within the context of the architectural evolution of Long Beach, as one of a limited number of fine examples of the Corporate International Style of architecture remaining in the City. The building embodies the distinctive characteristics of the Corporate International Style, and is a representative example of the style designed by local architects, Francis Heusel and Kenneth S. Wing. Despite having undergone a 60,000 square foot alteration in 1971, the building's exterior appearance still reflects its period of construction and retains a high degree of integrity of location, feeling, association, setting, design, materials and workmanship. The building has retained most of its character-defining features: curtain wall construction and glass windows inset in recliner grids, recessed first floor and use of squared columns, terrazzo floors, and windows and vertical surfaces on the same plane. Completed in 1960 the Old Long Beach Courthouse was one of the first projects of the Civic Center Master Plan. In addition, according to CEQA, all buildings constructed over 50 years ago and that possess architectural or historical significance may be considered potential historic resources. The Old Courthouse is now approximately 55 years in age and therefore would be considered a historical resource for the purposes of CEQA.
A Sacred Lands File search by the Native American Heritage Commission did not identify any sacred lands within the project site.

A cultural resources survey was conducted for the proposed project. The survey did not identify any surficial archaeological resources within the project site. Three additional built environment resources requiring survey and historic evaluation were identified within the project site: the City Hall-Library Complex, Lincoln Park, and the Broadway Parking Garage. Although not within the project site, the Public Safety Building located to the northwest of the project site within the Civic Center was also surveyed and evaluated due to its proximity to the project site and association with the remaining Civic Center buildings and structures on the property.

Completed in 1977 by Allied Architects, the Long Beach City Hall-Library Complex is an intact example of Late Modern architecture that retains integrity of design, materials, feeling, workmanship, association and location. The City Hall-Library Complex appears individually eligible for listing in the CRHR as an individual resource under Criterion 3 as a representative example of the Late Modern-style with unique landscape design elements and as the work of a group of local master architects. The complex is one of a limited number of fine examples of the Late Modern Style of architecture remaining in the city. Designed by a consortium of local architects that consisted of Hugh and Donald Gibbs, Frank Homolka, Ed Killingsworth, Brady and Associates, and Kenneth S. Wing Jr. and Sr., each considered local masters in their own right, the complex is unique for its collaborative design amongst local architects and represents the collective work of a group of masters. The Library rooftop design contributions of master landscape architect Peter Walker also contribute to the significance and eligibility of the complex. Designed in fulfillment of the goals of centralization outlined in the 1950s Civic Center Master Plan, the City Hall-Library Complex represents the final completed element of the

project. For the same reasons, the City Hall-Library Complex is also eligible for City of Long Beach Landmark Designation. As noted under section 4.3.1 (b) "Regulatory Setting," most resources must meet the 50-year threshold for historic significance; however, resources less than 50 years in age may be eligible for listing on the CRHR if it can be demonstrated that sufficient time has passed to understand their historical importance. Although the City Hall-Library Complex is less than 50 years in age (constructed in 1977) it is a representative example of the Late Modern-style with unique landscape design elements and as the work of a group of local master architects is eligible for listing in the CRHR and for City of Long Beach Landmark Designation. Therefore, the City Hall-Library Complex is considered a historical resource for the purposes of CEQA.

The Public Safety Building and Lincoln Park have undergone continuous alterations since their construction, significantly reducing their historic integrity. The Broadway Parking Garage is a simple structure, lacking in design and character, constructed outside of the historic district period of significance. The Public Safety Building, Lincoln Park and the Broadway Parking Garage were found to be ineligible for listing in the CRHR as individual resources.

The project site and the adjacent Public Safety Building were also assessed to determine if the buildings and structures were eligible for listing in the CRHR or at the local level as a potential historic district. While the buildings and structures within the Civic Center are all functionally related and were each designed for municipal purposes, the alterations to the Public Safety Building and Lincoln Park and construction of the Broadway Parking Garage have reduced the integrity of the site and weakened its cohesive overall identity, making it ineligible for consideration as a CRHR or locally eligible historic district.

Paleontological. The project site is located in the southwest portion of the Los Angeles Basin in the Peninsular Ranges geomorphic province. The Los Angeles Basin is subdivided into the following four structural blocks: the southwestern block, the northwestern block, the central block and the northeastern block. The project site is generally located within the boundary area of the southwestern and central blocks. This boundary area is referred to as the Newport-Inglewood Structural Zone, which can be traced from Beverly Hills to Newport Bay where it trends offshore (Norris and Webb, 1990; Jennings, 1962).

A single sedimentary geologic unit has been mapped underlying the project area (Bedrossian et al. 2012): late to middle Pleistocene aged lacustrine, playa, and estuarine (paralic) sediments (Qol).

Quaternary Geologic Units. The Quaternary units mapped within the project site include only Pleistocene aged lacustrine, playa, and estuarine (paralic) sediments. These sediments are known to have produced significant paleontological resources (McLeod 2014). A single vertebrate fossil locality is known from within the project boundaries and three more are known from similar deposits in the immediate vicinity (McLeod 2014). Together, these three localities produced specimens of sea lion (Zalophus), camel (Camelops), whale, bison (Bison), ground sloth (Nothrotheriops), and mammoth (Mammuthus columbi). Based on these occurrences and their individual find contexts, surface grading or deeper excavations have the potential to uncover significant vertebrate fossils of middle to late Pleistocene age.

Paleontological Sensitivity. Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources

occur when earthwork activities, such as grading or trenching, cut into the geologic deposits (formations) within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. Such impacts have the potential to be significant. Sensitivity is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

Currently, two generally accepted paleontological sensitivity classifications are used: the Society of Vertebrate Paleontology (SVP) system outlined in the SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP, 2010) and the Bureau of Land Management (BLM) Potential Fossil Yield Classification (PFYC) system outlined in the BLM Instruction Memorandum (IM) No. 2008-009 (BLM, 2009). The BLM system allows for a finer level of classification than the more general SVP system. The City of Long Beach General Plan does not provide any specific guidance on paleontological sensitivity; however, based on the geologic units present within the project site, the SVP classification system provides a sufficient level of detail for assessing paleontological sensitivity within the project site. Affected geologic formations are classified based on the relative abundance of vertebrate fossils and significant non-vertebrate fossils using a scale of high, undetermined, low and no paleontological sensitivity, depending upon the resource sensitivity of the impacted geologic formations. The specific criteria applied for each sensitivity category are presented below and extracted directly from the SVP Guidelines (SVP, 2010):

- ***High Potential****: Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e. g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.*
- ***Undetermined Potential****: Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.*

- ***Low Potential****: Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e.g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.*
- ***No Potential****: Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection or impact mitigation measures relative to paleontological resources.*

In general terms, for geologic units with high sensitivity, full-time monitoring typically is recommended during any project-related ground disturbance. For geologic units with low sensitivity, protection or salvage efforts typically are not required. For geologic units with undetermined sensitivity, field surveys by a qualified paleontologist are usually recommended to specifically determine the paleontological potential of the rock units present within the study area. For geologic units with no sensitivity, a paleontological monitor is not required. Table 4.3-1 shows the mapped geologic units within the project site, their age and paleontological sensitivity.

Table 4.3-1
Geologic Units within the Project Site

Geologic Unit	Age	Notes	Paleontological Sensitivity (SVP)
Quaternary older lacustrine, playa, and estuarine (paralic) deposits (Qol)	Quaternary	Known to produce significant fossils in southern California	High

Sources: Jennings (1962); Bedrossian et al. (2012); McDougall et al. (2012)

4.3.2 Previous Environmental Review

The Long Beach Downtown Plan EIR (the "Downtown Plan EIR") examined the potentially historic resources in the Downtown Plan area. The Downtown Plan EIR determined that the Downtown Plan would have a significant but mitigable impact on archaeological resources. This determination was due to the fact that no surveys could be conducted prior to onset of demolition or other ground-disturbing activities. The project would be subject to the same general mitigation measures identified and analyzed in the Downtown Plan EIR, specifically CR-2(a) through CR-2(c), which require a qualified project archaeologist or archaeological monitor approved by the City to be present during excavation into native sediments; that the monitor shall also prepare a final report of any cultural resource finds; and that if human remains are encountered during excavation and grading activities, proper handling procedures shall be implemented, as regulated by the State Health and Safety Code.

The Downtown Plan EIR determined that the Downtown Plan would have a significant and unavoidable impact resulting from the potential redevelopment of properties that are eligible for listing on the National Register of Historic Places or the California Register of Historic Places, or that are determined eligible for listing as a City Landmark or Landmark District. The project would be subject to the same general mitigation measures identified in the Downtown Plan EIR, specifically CR-1(b), which outlines procedures to be followed prior to issuance of a

demolition permit or building permit for alteration of any property listed in the Historic Survey Report, designated as a Historic Landmark, listed in the Downtown Plan EIR, or other property 45 years of age or older that was not previously determined by the Historic Survey Report to be ineligible for listing as a historic resource.

The project includes the demolition of the former Long Beach Courthouse. The Long Beach Courthouse Demolition Project was studied in a Draft EIR (SCH# 2014051003) that was circulated in October and November of 2014, but was not certified. The Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to the significance of a historical resource would be significant and unavoidable despite implementation of required mitigation involving documentation of the courthouse in accordance with the general guidelines of Historic American Building Survey documentation.

4.3.3 Impact Analysis

a. Methodology and Significance Thresholds. According to Appendix G of the *State CEQA Guidelines*, impacts related to cultural resources from the proposed project would be significant if the project would:

- *Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5;*
- *Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;*
- *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature of paleontological or cultural value;*
- *Disturb any human remains, including those interred outside of formal cemeteries*

The following topics were determined to have less than significant impacts in the Initial Study prepared for the proposed project (Appendix A) and are not discussed further in this section:

- *Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;*
- *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature of paleontological or cultural value;*
- *Disturb any human remains, including those interred outside of formal cemeteries*

Historical resources are "significantly" affected if there is demolition, destruction, relocation, or alteration of the resource or its surroundings. Generally, impacts to historical resources can be mitigated to below a level of significance by following the Secretary of the Interior's *Guidelines for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* or the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* [13 PRC 15064.5 (b)(3)]. In some circumstances, documentation of an historical resource by way of historic narrative photographs or architectural drawings will not mitigate the impact of demolition below the level of significance [13 PRC 15126.4 (b)(3)].

b. Project Impacts and Mitigation Measures.

Threshold	*Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5.*

Impact CR-1 Construction of the proposed project would involve the demolition of the Old Courthouse and the Long Beach City Hall-Library Complex, which have been identified as historical resources for the purposes of CEQA. The Downtown Plan EIR determined that buildout of the Downtown Plan would result in Class I, significant and unavoidable impacts. Demolition of the Old Courthouse and the Long Beach City Hall-Library Complex would contribute to this Class I impact and would be a Class I, *significant and unavoidable* impact.

According to the Cultural Resources Study prepared for the proposed project (see Appendix C), the project site contains two historical resources: the Long Beach Courthouse and the City Hall-Library Complex, as representative examples of the Corporate and Late Modern styles and their associations with the institutional development of the City. Both resources were found individually eligible for the CRHR and are also eligible for City of Long Beach Landmark Designation. Therefore, the former Long Beach Courthouse and the City Hall-Library Complex are considered historical resources for the purposes of CEQA. The project would result in the demolition of these buildings and would therefore have a significant direct impact to cultural resources insofar as it entails a substantial adverse change in the significance of historical resources. Impacts to the Old Courthouse and the Long Beach City Hall-Library Complex would be significant.

As discussed in Section 2, *Project Description*, the project includes the development of History and Cultural Loops, a walking tour that would include historical, cultural, and educational points of interest throughout the project site. Points of interest would include the Carillon Clock Tower and 1915 Lincoln Park statue, as well as the Original Carnegie Library Cornerstone, Marlin Sculpture, time capsules (including the time capsule dedicated in 1976 at the Civic Center), and additional historical and cultural elements. Temporary art exhibits and historical timeline markers would also be present within the walking loops.

The project would be subject to Downtown Plan EIR Mitigation Measure CR-1(b), which outlines procedures to be followed prior to issuance of a demolition permit or building permit for alteration of any property listed in the Historic Survey Report, designated as a Historic Landmark, listed in the Downtown Plan EIR, or other property 45 years of age or older that was not previously determined by the Historic Survey Report to be ineligible for listing as a historic resource. Nonetheless, implementation of Downtown Plan EIR Mitigation Measure CR-1(b) would not reduce impacts to a less than significant level.

Mitigation Measures. The following mitigation measures, which would comply with Measure CR-1(b) of the Downtown Plan EIR, would reduce project impacts on historical resources to the degree feasible.

CR-1(a) Historic Artifact Collection Program. Impacts resulting from the demolition of the City Hall-Library Complex and Courthouse shall be

minimized through development of an archival identification and collections program. The purpose of this program will be to identify the existing historic artifacts, documents and other objects that are currently stored at the Main Library, City Hall and Port of Long Beach facilities, as well as key components of the Old Courthouse and City Hall-Library Complex to be demolished, so that these important relics can be utilized in the future by researchers and the public for educational purposes. As part of the program, the City will itemize, catalogue and rehouse the items, and establish appropriate conservation and storage measures for long-term preservation. One possible location for rehousing items would be as a museum in the proposed project's new Library. Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Development Services Department.

CR-1(b) **Building Documentation.** Impacts resulting from the demolition of the City Hall-Library Complex and Old Courthouse shall be minimized through archival documentation of as-built and as-found condition. Prior to issuance of the first occupancy permit for the project, the lead agency shall ensure that documentation of the building is completed in accordance with the general guidelines of Historic American Building Survey (HABS) documentation. The documentation shall include large-format photographic recordation, a historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History. The original archival-quality documentation shall be offered as donated material to repositories that will make it available for current and future generations. Archival copies of the documentation also would be submitted to the City of Long Beach Development Services Department, the downtown branch of the Long Beach Public Library, and the Historical Society of Long Beach where it would be available to local researchers. Completion of this mitigation measure shall be monitored and enforced by the City of Long Beach Development Services Department.

In its response to the Notice of Preparation (NOP) the SHPO suggests the following as mitigation: 1) additional historic surveys in parts of the City that have not been surveyed; (2) development of design guidelines for future re-use of public buildings; and (3) creation of a Historic Preservation Mitigation Fund. However, although these ideas may mitigate the impacts of potential future projects, they would not mitigate the impact of the currently proposed project. Consequently, there is no nexus between these suggested measures and the impact associated with the proposed project and these suggestions would not constitute "mitigation" under CEQA. City decisionmakers may, nevertheless, consider including one or more of these suggestions as conditions of project approval.

Significance After Mitigation. Implementation of Mitigation Measures CR-1(a) and CR-1(b), compliance with Downtown Plan EIR Mitigation Measure CR-1(b), and the project's Cultural and Historic Loops would reduce significant direct and cumulative impacts to the historical resource scheduled for demolition to the degree feasible, but not to below a level of significance.

Additional mitigation is infeasible due to the physical condition and limitations of the Old Courthouse and City Hall-Library complex and the physical limitations of the project site. As discussed in Section 2.0, *Project Description*, there are critical functional and physical deficiencies identified for the former Courthouse by the statewide Task Force on Court Facilities in 1997 and the Administrative Office of the Courts in 2001 that would make additional mitigation, such as rehabilitation of the former Courthouse, infeasible. These deficiencies are described in detail in Section 2.0, *Project Description*, but include Americans with Disabilities Act (ADA) accessibility issues and seismic deficiencies. Despite a limited retrofit at an estimated cost of $13.9 million by the County of Los Angeles, the Courthouse is expected to remain standing long enough to evacuate, but would not be capable of being re-occupied following a medium-sized earthquake. RRM Design Group prepared an Adaptive Reuse Study for the former Long Beach Courthouse in September 2014 (Appendix H of the Long Beach Courthouse Demolition Project Draft EIR). The study determined that adaptive reuse of the former Courthouse would require substantial upgrades to the building's structural, mechanical, plumbing, fire protection, lighting and electrical systems. All levels of the building's interior would require substantial modernization to comply with the California's building codes, energy efficiency regulations and disabled access for a government office use. The Study estimated that costs for rehabilitation of the former Courthouse and conversion to municipal office use would range from $124,650,000 to $138,500,000. City Hall has seismic deficiencies that would also require rehabilitation costs. Moreover, the project site is largely built out; retaining the former Courthouse and the City Hall-Library Complex would restrict space available to achieve project objectives, such as redeveloping the Civic Center mega-block into a vibrant mix of public and private space with a grand Civic Plaza; improving connections between the new Civic Center and greater Downtown through the reestablishment of the small block grid of the historic downtown street fabric; and private development of housing, office, hotel, and retail, with ten percent of all housing units being affordable to moderate income persons. As additional mitigation is infeasible, demolition of the Old Courthouse and the City Hall-Library Complex would have significant and unavoidable impacts.

c. Cumulative Impacts.

In terms of historical resources, the analysis of cumulative impacts relates to whether impacts of the proposed project and future related projects, considered together, might substantially impact and/or diminish the number of similar historic resources, in terms of context or property type. While the proposed project would result in significant impacts to historic resources, the proposed project would not be expected to result in cumulative adverse impacts to historic resources as it is the only proposed project in the vicinity that involves the demolition of a historic building. The Cultural Resources Study also assessed the project site and the adjacent Public Safety Building to determine if the buildings and structures were eligible for listing in the CRHR or at the local level as a potential historic district (see Appendix C). The Cultural Resources Study found that while the buildings and structures within the Civic Center are all functionally related and were each designed for municipal purposes, the alterations to

the Public Safety Building and Lincoln Park and construction of the Broadway Parking Garage have reduced the integrity of the site and weakened its cohesive overall identity, making it ineligible for consideration as a CRHR or locally eligible historic district; therefore, although the project would result in significant impacts to historic resources (the former Long Beach Courthouse and City Hall-Library Complex), impacts to these historic resources would not result in any cumulative impacts because the Civic Center is ineligible for consideration as a CRHR or locally eligible historic district. Any future projects would need to be analyzed on a case-by-case basis pursuant to CEQA, with a determination made for each project on the significance of indirect impacts to historic resources, as well as any future historic resources that are identified in the vicinity. Therefore, impacts related to historical resources would not be cumulatively considerable.

4.4 GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

This section addresses the proposed project's contribution to cumulative impacts to global climate change.

4.4.1 Environmental Setting

a. Climate Change and Greenhouse Gases. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC, 2013), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-20th century (IPCC, 2013).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Observations of CO_2 concentrations, globally-averaged temperature, and sea level rise are generally well within the range of the extent of the earlier IPCC projections. The recently observed increases in CH_4 and N_2O concentrations are smaller than those assumed in the scenarios in the previous assessments. Each IPCC assessment has used new projections of future climate change that have become more detailed as the models have become more advanced.

Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and sulfur hexafluoride (SF_6) (California Environmental Protection Agency [CalEPA], 2006). Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a

common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane (CH_4) has a GWP of 25, meaning its global warming effect is 25 times greater than carbon dioxide on a molecule per molecule basis (IPCC, 2007).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler (CalEPA, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The following discusses the primary GHGs of concern.

Carbon Dioxide. The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (United States Environmental Protection Agency [U.S. EPA], April 2014). CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the second half of the 20th century. Concentrations of CO_2 in the atmosphere have risen approximately 40 percent since the industrial revolution. The global atmospheric concentration of CO_2 has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC, 2007; Oceanic and Atmospheric Administration [NOAA], 2010). The average annual CO_2 concentration growth rate was larger between 1995 and 2005 (average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA, 2014). Currently, CO_2 represents an estimated 74 percent of total GHG emissions (IPCC, 2007). The largest source of CO_2 emissions, and of overall GHG emissions, is fossil fuel combustion.

Methane. Methane (CH_4) is an effective absorber of radiation, though its atmospheric concentration is less than that of CO_2 and its lifetime in the atmosphere is limited to 10 to 12 years. It has a GWP approximately 25 times that of CO_2. Over the last 250 years, the concentration of CH_4 in the atmosphere has increased by 148 percent (IPCC, 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH_4 include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (U.S. EPA, 2014).

Nitrous Oxide. Concentrations of nitrous oxide (N_2O) began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA, 2014). N2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of N_2O emissions. The GWP of nitrous oxide is approximately 298 times that of CO2 (IPCC, 2007).

Fluorinated Gases (HFCS, PFCS and SF_6). Fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfurhexafluoride (SF_6), are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF_6 emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO_2, CH_4, and N_2O, but these compounds have much higher GWPs. SF_6 is the most potent GHG the IPCC has evaluated.

Greenhouse Gas Emissions Inventory. Worldwide anthropogenic emissions of GHGs were approximately 46,000 million metric tons (MMT, or gigatonne) CO_2e in 2010 (IPCC, 2014). CO_2 emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, CO_2 was the most abundant, accounting for 76 percent of total 2010 emissions. Methane emissions accounted for 16 percent of the 2010 total, while nitrous oxide and fluorinated gases account for 6 and 2 percent respectively (IPCC, 2014).

Total U.S. GHG emissions were 6,525.6 MMT CO_2e in 2012 (U.S. EPA, 2014). Total U.S. emissions have increased by 4.7 percent since 1990; emissions decreased by 3.4 percent from 2011 to 2012 (U.S. EPA, 2014). The decrease from 2011 to 2012 was due to a reduction in the carbon intensity of fuels consumed to generate electricity due to a decrease in coal consumption, with increased natural gas consumption. Additionally, relatively mild winter conditions, especially in regions of the United States where electricity is important for heating, resulted in an overall decrease in electricity demand in most sectors. Since 1990, U.S. emissions have increased at an average annual rate of 0.2 percent. In 2012, the transportation and industrial end-use sectors accounted for 28.2 percent and 27.9 percent of CO_2 emissions (with electricity-related emissions distributed), respectively. Meanwhile, the residential and commercial end-use sectors accounted for 16.3 percent and 16.4 percent of CO_2 emissions, respectively (U.S. EPA, 2014).

Based upon the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2012 (CARB, 2014), California produced 459 MMT CO_2e in 2012. The major source of GHG in California is transportation, contributing 36 percent of the state's total GHG emissions. Electric power is the second largest source, contributing 21 percent of the state's GHG emissions (CARB, 2014). The industrial sector accounted for approximately 19 percent of the total emissions. California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. CARB has projected statewide unregulated GHG emissions for the year 2020 will be 507 MMT CO_2e (CARB, August 2013). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

Potential Effects of Climate Change. Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or

above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Long-term trends have found that each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The global combined land and ocean temperature data show an increase of about 0.89°C (0.69°C–1.08°C) over the period 1901–2012 and about 0.72°C (0.49°C–0.89°C) over the period 1951–2012 when described by a linear trend. Several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations are in agreement that LSAT as well as sea surface temperatures have increased. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC, 2013).

According to the CalEPA's *2010 Climate Action Team Biennial Report*, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA, 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

Sea Level Rise. According to The Impacts of Sea-Level Rise on the California Coast, prepared by the California Climate Change Center (CCCC, 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The most recent IPCC report (2013) predicts a mean sea–level rise of 11-38 inches by 2100. This prediction is more than 50 percent higher than earlier projections of 7-23 inches, when comparing the same emissions scenarios and time periods. The previous IPCC report (2007) identified a sea level rise on the California coast over the past century of approximately eight inches. Based on the results of various climate change models, sea level rise is expected to continue. The California Climate Adaptation Strategy (2009) estimates a sea level rise of up to 55 inches by the end of this century.

Air Quality. Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (California Energy Commission [CEC], 2009).

Water Supply. Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of

snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR], 2008; CCCC, 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, 2008).

Hydrology. As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 mm per year, which is double the observed 20th century trend of 1.6 mm per year (World Meteorological Organization [WMO], 2013). As a result, sea levels averaged over the last decade were about 8 inches higher than those of 1880 (WMO, 2013). Sea level rise may be a product of climate change through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. Increased CO_2 emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture. California has a $30 billion annual agricultural industry that produces half of the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC, 2006).

Ecosystems and Wildlife. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, 2004).

According to the Center for Ocean Solutions, potential impacts from sea level rise on coastal communities, such as those in Long Beach, include: coastal erosion, coastal inundation, the intrusion of salt water into fresh water, and increased frequency and intensity of storms and waves. Unlike flooding events that can be short lived, erosion can cause greater and potentially permanent damage. Coastal erosion will increase as global sea levels continue to rise. Higher sea levels will allow waves and tides to travel farther inland, exposing beaches, cliffs and coastal dunes to more persistent erosion forces. Erosion is not a new issue in California but rising sea levels threaten to increase the severity and frequency of erosion damage to coastal infrastructure and property.

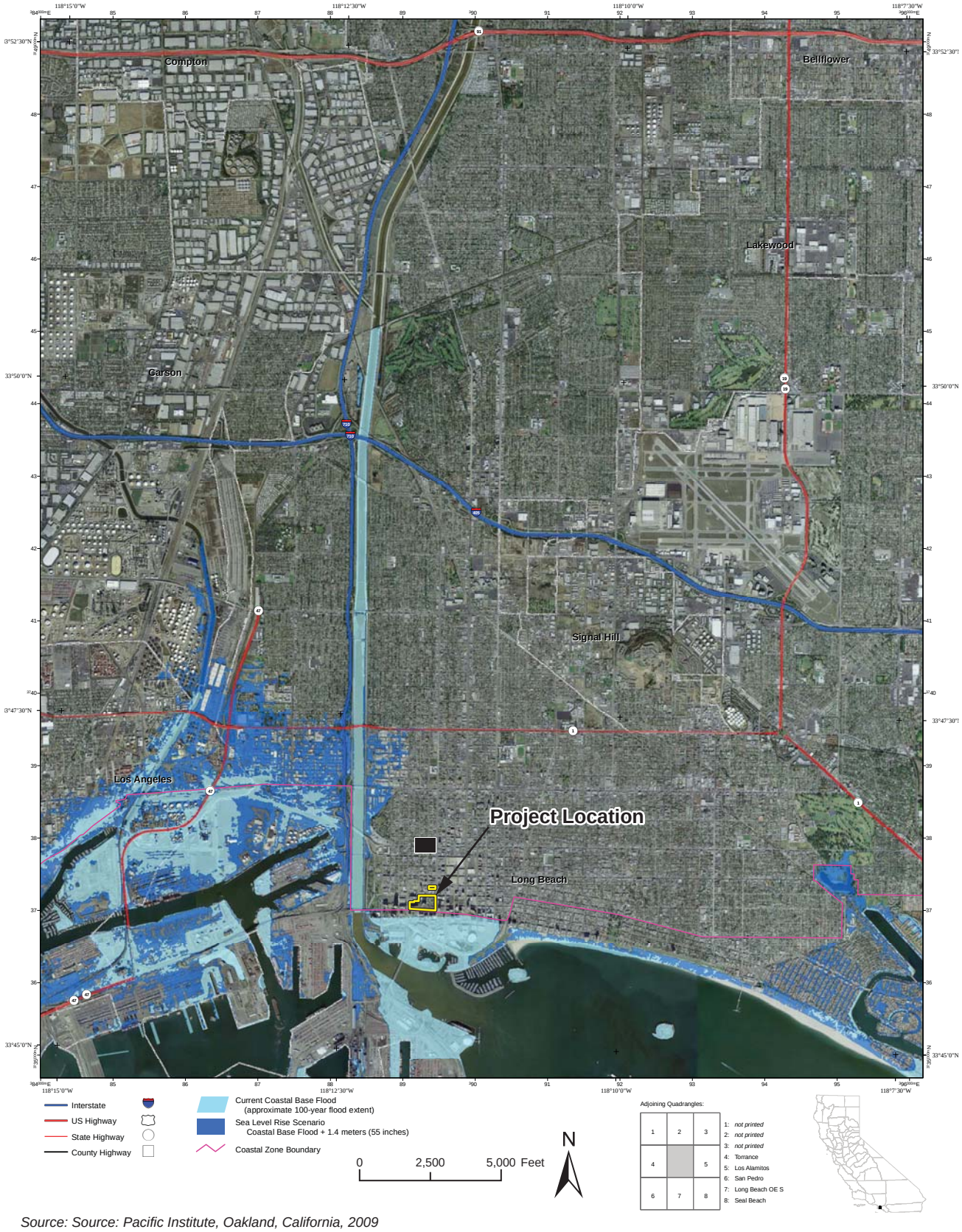
Projected sea level rise in Long Beach is depicted in Figure 4.4-1. This figures show an approximate 4.6-foot (1.4-meter) sea level rise combined with a 100-year flood in 2100.

b. Regulatory Setting. The following regulations address both climate change and GHG emissions.

International Regulations. The United States is, and has been, a participant in the United Nations Framework Convention on Climate Change (UNFCCC) since it was produced in 1992. The UNFCCC is an international environmental treaty with the objective of, "stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." This is generally understood to be achieved by stabilizing global GHG concentrations between 350 and 400 ppm, in order to limit the global average temperature increases between 2 and 2.4°C above pre-industrial levels (IPCC, 2007). The UNFCCC itself does not set limits on GHG emissions for individual countries or enforcement mechanisms. Instead, the treaty provides for updates, called "protocols," that would identify mandatory emissions limits.

Five years later, the UNFCCC brought nations together again to draft the *Kyoto Protocol* (1997). The Kyoto Protocol established commitments for industrialized nations to reduce their collective emissions of six GHGs (CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs) to 5.2 percent below 1990 levels by 2012. The United States is a signatory of the Kyoto Protocol, but Congress has not ratified it and the United States has not bound itself to the Protocol's commitments (UNFCCC, 2007). The first commitment period of the Kyoto Protocol ended in 2012. Governments, including 38 industrialized countries, agreed to a second commitment period of the Kyoto Protocol beginning January 1, 2013 and ending either on December 31, 2017 or December 31, 2020, to be decided by the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its seventeenth session (UNFCCC, 2011).

In Durban (17th session of the Conference of the Parties in Durban, South Africa, December 2011), governments decided to adopt a universal legal agreement on climate change as soon as possible, but not later than 2015. Work will begin on this immediately under a new group called the Ad Hoc Working Group on the Durban Platform for Enhanced Action. Progress was also made regarding the creation of a Green Climate Fund (GCF) for which a management framework was adopted (UNFCCC, 2011).



Source: Source: Pacific Institute, Oakland, California, 2009

California Flood Risk:
Sea Level Rise - Long Beach

Figure 4.4-1

Federal Regulations. The United States Supreme Court in Massachusetts et al. v. Environmental Protection Agency et al. ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act.

The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The first annual reports for these sources were due in March 2011.

On May 13, 2010, the U.S. EPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 tons CO_2e per year for GHG emissions. New and existing industrial facilities that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the U.S. EPA published the "PSD and Title V Permitting Guidance for Greenhouse Gases." The U.S. EPA's guidance document is directed at state agencies responsible for air pollution permits under the Federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry. It is expected that most states will use the U.S. EPA's new guidelines when processing new air pollution permits for power plants, oil refineries, cement manufacturing, and other large point sources of pollution.

On January 2, 2011, the U.S. EPA implemented the first phase of the Tailoring Rule for GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 tons CO_2e per year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time new sources were subject to GHG Title V permitting if the source emits 100,000 tons CO_2e per year, or they are otherwise subject to Title V permitting for another pollutant and emit at least 75,000 tons CO_2e per year.

On July 3, 2012 the U.S. EPA issued the final rule that retains the GHG permitting thresholds that were established in Phases 1 and 2 of the GHG Tailoring Rule. These emission thresholds determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

California Regulations. CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. California has a numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, U.S. EPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025. Fleet average emission standards would reach 22 percent reduction from 2009 levels by 2012 and 30 percent by 2016. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles (LEV), Zero Emissions

Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB, 2011).

In 2005, Executive Order (EO) S-3-05 established statewide GHG emissions reduction targets. EO S-3-05 provides that by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent below 1990 levels (CalEPA, 2006). In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report") (CalEPA, 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture. In April 2015 Governor Brown issued EO B-30-15, calling for a new target of 40 percent below 1990 levels by 2030.

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels; the same requirement as under S-3-05), and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, CARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO_2e. The Scoping Plan was approved by CARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted over the last five years. Implementation activities are ongoing and CARB is currently the process of updating the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defines CARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 goals set forth in EO S-3-05. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (CARB, 2014).

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions.

The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

CARB Resolution 07-54 establishes 25,000 metric tons (MT) of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005 percent of California's total inventory of GHG emissions for 2004.

Senate Bill (SB) 375, signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from vehicles for 2020 and 2035. In addition, SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, CARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Southern California Association of Governments (SCAG) was assigned targets of an 8 percent reduction in GHGs from transportation sources by 2020 and a 13 percent reduction in GHGs from transportation sources by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

In April 2011, Governor Brown signed SB 2X requiring California to generate 33 percent of its electricity from renewable energy by 2020.

For more information on the Senate and Assembly Bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

California Environmental Quality Act. Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. To date, the South Coast Air Quality Management District (SCAQMD), the Bay Area Air Quality Management District (BAAQMD), the San Luis Obispo Air Pollution Control District (SLOAPCD), and the San Joaquin Air Pollution Control District (SJVAPCD) have adopted quantitative significance thresholds for GHGs.

Local Regulations. In February 2010, the Long Beach City Council adopted the Long Beach Sustainable City Action Plan, which includes initiatives, goals, and actions to reduce the City's GHG emissions. In October 2011, the Port of Long Beach developed the Greenhouse Gas Emissions Reduction Mitigation Grant Program (GHG Grant Program) to provide grant funds for projects that will reduce, avoid or capture GHG emissions. Projects eligible for funding from the program include energy efficiency, transportation, renewable energy and landscaping projects. The City of Long Beach has successfully registered its GHG emissions inventory with the California Climate Action Registry, earning the distinction of Climate Action Leader. The

City is now publicly and voluntarily reporting its 2007 GHG emissions under the California Registry's program.

4.4.2 Previous Environmental Review

The Long Beach Downtown Plan EIR (the "Downtown Plan EIR") determined that construction activities associated with full buildout of the Downtown Plan would result in the generation of GHG emissions that would cause a significant and unavoidable impact. The project would contribute to this impact, as it would generate GHG emissions through the burning of fossil fuels or other GHG emissions during construction, creating temporary emissions, including on-site stationary emissions and off-site mobile emissions. The Downtown Plan EIR estimated GHG emissions using URBEMIS 2007 Version 9.2.4. Construction and operational emissions were modeled based on default SCAQMD-recommended settings and parameters attributable to the proposed land use types and site location. The project would be subject to the mitigation measures identified and analyzed in the Downtown Plan EIR, specifically GHG-1(b), which requires that project applicant(s) obtain the most current list of construction-related GHG-reduction measures recommended by the City and/or SCAQMD and stipulate that these measures be implemented. Implementation of Downtown Plan EIR Mitigation Measure GHG-1(a), which calls for implementation of Mitigation Measure AQ-1, would require the application of Enhanced Exhaust Control Programs during construction that would reduce construction emissions of criteria air pollutants and precursors that would also reduce GHG emissions.

The Downtown Plan EIR determined that operation of uses facilitated by the Downtown Plan would also result in generation of GHG emissions that would cause a significant and unavoidable impact. Mitigation Measure GHG-2(a), which implements Mitigation Measure AQ-2, would be applicable to the project and requires implementation of ride-share programs, development of secure bicycle parking areas, exceedance of Title 24 energy efficiency standards by 20 percent, and inclusion of such measures as solar panels to achieve an additional 25 percent reduction in electricity use. Mitigation Measure GHG-2(b) requires project applicants within the Downtown Plan to implement energy efficiency, water efficiency, solid waste reduction, mobile strategies, and other measures detailed in the Downtown Plan EIR to reduce GHG emissions associated with the operation of future project development phases and supporting roadway and infrastructure improvements by an amount sufficient to achieve the goal of 6.6 MT CO_2e per service population per year. Mitigation Measure GHG-2(b) would require the project to reduce operational impacts to the extent feasible. Emissions estimates from operation may also be lower than predicted due to increased efficiency in technology since the EIR was adopted.

The project includes the demolition of the former Long Beach Courthouse. The Long Beach Courthouse Demolition Project was studied in a Draft EIR (SCH# 2014051003) that was circulated in October and November of 2014, but was not adopted. The Long Beach Courthouse Demolition Project Draft EIR determined that the demolition would not generate significant GHG emissions, and would not interfere with State, regional, or climate change plans, policies, or regulations. Impacts of the demolition project were determined to be less than significant. Nevertheless, demolition of the former Courthouse is included in this analysis of the project's GHG emissions.

4.4.3 Impact Analysis

a. Methodology and Significance Thresholds. Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions in March 2010. These guidelines are used in evaluating the cumulative significance of GHG emissions from the proposed project.

According to the adopted CEQA Guidelines, impacts related to GHG emissions from the proposed project would be significant if the project would:

- *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or*
- *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

The majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (*CEQA Guidelines*, Section 15355).

The SCAQMD threshold, which was adopted in December 2008, considers emissions of over 10,000 MT CO_2e/year to be significant. However, the SCAQMD's threshold applies only to stationary sources and is intended to apply only when the SCAQMD is the CEQA lead agency.

In the latest guidance provided by the SCAQMD's GHG CEQA Significance Threshold Working Group in September 2010, SCAQMD has considered a tiered approach to determine the significance of residential and commercial projects. The draft-tiered approach is outlined in the meeting minutes, dated September 29, 2010.

> ***Tier 1*** *- If the project is exempt from further environmental analysis under existing statutory or categorical exemptions, there is a presumption of less than significant impacts with respect to climate change. If not, then the Tier 2 threshold should be considered.*
>
> ***Tier 2*** *- Consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines section 15064(h)(3), 15125(d) or 15152(a). Under this Tier, if the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If there is not an adopted plan, then a Tier 3 approach would be appropriate.*
>
> ***Tier 3*** *- Establishes a screening significance threshold level to determine significance. The Working Group has provided a recommendation of 3,000 tons of CO_2e per year for commercial projects.*

Downtown Plan EIR Mitigation Measure GHG-2(b) outlines a GHG reduction plan for projects within the Plan Area and requires that projects reduce GHG emissions associated with the operation of future project development phases and supporting roadway and infrastructure improvements by an amount sufficient to achieve the goal of 6.6 MT CO_2e per service population per year. As the Downtown Plan is an adopted plan, SCAQMD's Tier 3 approach, although not formally adopted, is the appropriate threshold. Therefore, 6.6 MT CO_2e per service population per year is used to gauge the significance of the project's impact to climate change.

Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches (as discussed below in GHG Cumulative Significance) adequately address impacts from temporary construction activity. As stated in the CEQA and Climate Change white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA, 2008). Nevertheless, air districts such as the SCAQMD (2015) have recommended amortizing construction-related emissions over a 30-year period in conjunction with the proposed project's operational emissions. Therefore, although Mitigation Measure GHG-2(b) stipulates that the goal should be applied to GHG emissions associated with operational emissions and emissions from roadway and infrastructure improvements, this threshold has been applied to the project's combined operational and amortized construction emissions, per SCAQMD's recommendation (2015).

Study Methodology. Calculations of CO_2, CH_4, and N_2O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO_2, CH_4, and N_2O because these make up 98.9 percent of all GHG emissions by volume (IPCC, 2007) and are the GHG emissions that the project would emit in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, the potential for future occupants of the proposed industrial structures is unknown at this time and to forecast emissions of fluorinated gases would be necessarily speculative. Emissions of all GHGs are converted into their CO_2e. Minimal amounts of other main GHGs (such as chlorofluorocarbons [CFCs]) would be emitted; however, these other GHG emissions would not substantially add to the calculated CO_2e amounts. Calculations are based on the methodologies discussed in the CAPCOA CEQA and Climate Change white paper (2008) and included the use of the California Climate Action Registry (CCAR) General Reporting Protocol (2009).

On-Site Operational Emissions. Operational emissions associated with existing land uses (including City Hall, the Main Library, Lincoln Park, Lincoln Parking Structure, and existing parking lots) and proposed on-site development were calculated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 software program (see Appendix B for calculations). The former Courthouse was not included in existing uses because it is not currently in operation. Operational emissions from energy use (electricity and natural gas use) for the project were estimated using CalEEMod. The default values on which CalEEMod are based include the CEC-sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies. CalEEMod provides operational emissions of CO_2, N_2O and CH_4. This methodology is considered reasonable and reliable for use, as it has been subjected to peer review by numerous public and private stakeholders, and in particular by the CEC. It is also recommended by CAPCOA (2008).

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating, were calculated in CalEEMod and utilize standard emission rates from CARB, U.S. EPA, and district supplied emission factor values (CalEEMod User Guide, 2013).

Emissions from waste generation were also calculated using CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (CalEEMod User Guide, 2013). Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Emissions from water and wastewater usage calculated in CalEEMod were based on the default electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Northern and Southern California.

Modeling assumed compliance with Downtown Plan EIR Mitigation Measures AQ-2 and GHG-2(b) discussed in "Previous Environmental Review." Complete results from CalEEMod and assumptions can be viewed in Appendix B.

Direct Emissions from Mobile Combustion. Emissions of CO_2 and CH_4 from transportation sources for the proposed project were quantified using CalEEMod. Because CalEEMod does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using the California Climate Action Registry General Reporting Protocol (2009) direct emissions factors for mobile combustion (see Appendix C for calculations). The estimate of total daily trips associated with the proposed project was based on the Traffic Study prepared by Linscott, Law, and Greenspan, Engineers (LLG) in June 2015 and was calculated and extrapolated to derive total annual mileage in CalEEMod. Emission rates for N_2O emissions were based on the vehicle mix output generated by CalEEMod and the emission factors found in the California Climate Action Registry General Reporting Protocol.

A limitation of the quantitative analysis of emissions from mobile combustion is that emission models, such as CalEEMod, evaluate aggregate emissions, meaning that all vehicle trips and related emissions assigned to a project are assumed to be new trips and emissions generated by the project itself. Such models do not demonstrate, with respect to a regional air quality impact, what proportion of these emissions are actually "new" emissions, specifically attributable to the project in question. For most projects, the main contributor to regional air quality emissions is from motor vehicles; however, the quantity of vehicle trips appropriately characterized as "new" is usually uncertain as traffic associated with a project may be relocated trips from other locales. In other words, vehicle trips associated with the project may include trips relocated from other existing locations. Therefore, because the proportion of "new" versus relocated trips is unknown, the VMT estimate generated by CalEEMod is used as a conservative, "worst-case" estimate.

Construction Emissions. Construction of the proposed project would generate temporary GHG emissions primarily due to the operation of construction equipment and truck trips. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. CalEEMod was used to estimate emissions associated with the construction period, based on parameters such as the duration of construction activity, area of disturbance, and anticipated equipment use during construction. Modeling assumed

compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(c), discussed in "Previous Environmental Review" (SCAQMD rules are described in more detail in Section 4.2, *Air Quality*). Complete results from CalEEMod and assumptions can be viewed in Appendix B.

Service Population. According to the Downtown Plan EIR, the project's service population is the number of residents accommodated by the project plus the number of jobs supported by the project. The proposed project would accommodate up to 780 new residential units within Long Beach. The City has approximately 2.82 persons per household (California Department of Finance, 2014). Development of the proposed project would therefore accommodate an estimated 2,200 residents (780 dwelling units x 2.82 people/dwelling unit). In addition, the project's commercial and institutional components would support jobs. As shown in Table 4.4-1, the project would support approximately 1,787 employees. Therefore, the total service population for the proposed project would be 3,987 persons.

Table 4.4-1
Employees Supported by Proposed Project

Land Use	Area (sf)	Area (acres)	Employees per Acre	Total Employees
Hotel	290,400	6.67	51.91	346
Port Building[1]	240,000	--	--	432
City Hall[1]	270,000	--	--	899
Library[2]	92,000	--	--	91
Restaurant[3]	8,000	0.18	25.76	5
Retail	32,000	0.73	18.86	14
			Total[4]	1,787

Source: Table C-1, Range of Employment Densities (Employees Per Acre) by County (Southern California Association of Governments (SCAG), Employment Density Study Summary Report, October 31, 2001). .
1. Anticipated employee count for City Hall and Port Building; Source: Amy Bodek, City of Long Beach, personal communication, July 2015.
2. Employee count from existing Main Library; Source: Stephanie Kemp, City of Long Beach, personal communication, July 2015.
3. Employee rate for "Other Retail/Services" in SCAG Table C-1 was used, as "Restaurant" is not listed.
4. Total employees rounded up, as partial employees are not possible.

Project Impacts and Mitigation Measures.

Threshold	*Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Impact GHG-1 **Development associated with the proposed project would generate additional GHG emissions beyond existing conditions from construction and operational activities. The Downtown Plan EIR determined that both construction and operational GHG emissions associated with buildout of the Downtown Plan would result in significant and unavoidable impacts. The proposed project would contribute to this impact; however, GHG emissions would not exceed the 6.6 MT CO_2e per service population per year significance threshold as required by Downtown Plan EIR Mitigation Measure AQ-2 and no additional mitigation measures would be required. Impacts would therefore be Class III, *less than significant.***

Operational emissions associated with existing land uses (including City Hall, the Main Library, Lincoln Park, Lincoln Parking Structure, and existing parking lots), as well as construction and operational emissions associated with proposed on-site development were calculated using CalEEMod. The former Courthouse was not included in existing uses because it is currently not in operation. The following summarizes the project's overall GHG emissions (see Appendix B for full CalEEMod worksheets).

Construction Emissions. The project construction schedule indicates that construction would occur in phases over approximately seven years beginning in 2016. Based on the CalEEMod results, construction activity facilitated by the proposed project would generate an estimated 16,583.8 metric tons of CO_2e (as shown in Table 4.4-2). Amortized over a 30-year period (the assumed life of the project), construction facilitated by the project would generate an estimated 552.8 metric tons of CO_2e per year.

Table 4.4-2
Estimated Construction Emissions of Greenhouse Gases

Construction Year	CO_2e (MT)
2016	2,400.0
2017	3,424.0
2018	2,819.0
2019	2,251.4
2020	2,518.6
2021	2,535.6
2022	635.1
Total	**16,583.8**
Amortized over 30 years	**552.8 MT per year**

See Appendix B for calculations and for GHG emission factor assumptions. Assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(c).
Note: Total may not add up due to rounding.

Long-Term Stationary and Mobile Source Emissions. Operational emissions associated with existing uses (City Hall, Main Library, Lincoln Park, Lincoln Parking Structure, and parking lots) and proposed on-site development were estimated using CalEEMod. The former Courthouse was not included in existing uses because it is not currently in operation. Because the proposed project would in part replace existing facilities (Civic Center, Library), Table 4.4-3 summarizes the net increase in emissions associated with operation of the proposed project (emissions from proposed on-site development minus emissions from existing development to be removed or replaced as part of the project). Net operational emissions are estimated at 10,723.5 metric tons of CO_2e per year.

Table 4.4-3
Long-Term Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions MT CO_2e
Project Emissions	
Operational	
Area	11.4
Energy	4,338.2
Solid Waste	1,803.3
Water	1,046.5
Mobile	
CH_4 and CO_2	13,178.9
N_2O	720.9
Total Operational Emissions	*21,099.2*
Existing Emissions	
Operational	
Area	<0.1
Energy	2,267.6
Solid Waste	791.7
Water	442.9
Mobile	
CH_4 and CO_2	6,562.1
N_2O	311.4
Total Existing Emissions	*10,375.7*
Net Increase in Long-Term GHG Emissions [Project – Existing]	**10,723.5**

Sources: See Appendix B for calculations and for GHG emission factor assumptions. Assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measures AQ-1(c), AQ-2, and GHG-2(b).
Note: Total may not add up due to rounding.

Combined Construction, Stationary and Mobile Source Emissions. Table 4.4-4 summarizes the combined emissions associated with construction and operation of the proposed project and illustrates the overall emissions per service population. Construction emissions associated with construction activity (approximately 16,583.8 metric tons of CO_2e) are amortized over 30 years (the anticipated life of the project). For the proposed project, net combined annual emissions would total 11,276.3 MT CO_2e per year. With a service population of 3,987 persons, the project's net combined annual emissions would total 2.8 MT CO_2e per service population per year, which is less than the significance threshold of 6.6 CO_2e per service population per year required by Downtown Plan EIR Mitigation Measure GHG-2(b). Therefore, impacts from GHG emissions would be less than significant.

Table 4.4-4
Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions MT CO_2e
Project Emissions	
Construction	552.8
Operation	7,199.4
Mobile	13,899.8
Total Project Emissions	*21,652.0*
Total Existing Emissions	***10,375.7***
Net Increase in GHG Emissions [Project – Existing]	**11,276.3**
GHG Emissions/SP/year	**2.8 MT CO_2e/SP/year**
Exceed Threshold (6.6 MT CO_2e/SP/year)?	**No**

Sources: See Appendix B for calculations and for GHG emission factor assumptions. Assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measures AQ-1(c), AQ-2, and GHG-2(b).
Note: Total may not add up due to rounding.
SP = service population (3,987 persons)

Mitigation Measures. Because impacts would be less than significant with mitigation from the Downtown Plan EIR, no mitigation beyond that required in the Downtown Plan EIR is required.

Significance after Mitigation. The Downtown Plan EIR determined that both construction and operational GHG emissions associated with buildout of the Downtown Plan would result in significant and unavoidable impacts. The proposed project would contribute to this impact; however, the project's emissions would be less than the significance threshold and no additional mitigation beyond that required by the Downtown Plan EIR would be necessary. Impacts would be less than significant (Class III) without additional mitigation.

Threshold	*Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Impact GHG-2 The proposed project would be consistent with the Climate Action Team GHG reduction strategies, the SCAG Sustainable Communities Strategy, and Long Beach Sustainable City Action Plan Goals. Impacts related to consistency with GHG plans and policies would therefore be Class III, *less than significant.*

The proposed project would be generally consistent with applicable regulations or plans addressing GHG reductions. As indicated above, the CAT published the Climate Action Team Report (the "2006 CAT Report") in March 2006. The CAT Report identifies a recommended list of strategies that the State could pursue to reduce climate change greenhouse gas emissions.

The CAT strategies are recommended to reduce GHG emissions at a statewide level to meet the goals of the Executive Order S-3-05. These are strategies that could be implemented by various State agencies to ensure that the Governor's targets are met and can be met with existing authority of the State agencies.

The SCAG SCS contains a number of strategies that relate to the operations of SCAG and regional land use planning. Since such strategies lie beyond the scope of individual development projects, only those strategies applicable to the proposed project are addressed.

The City of Long Beach adopted a Sustainable City Action Plan in 2010. This plan contains goals intended to support sustainable development within the City. Implementation of this plan would contribute to a reduction in the City's overall GHG emissions.

Table 4.4-5 through Table 4.4-7 illustrate that the proposed project would be consistent with the GHG reduction strategies set forth by the 2006 CAT Report, the SCAG SCS, and the Sustainable City Action Plan. Therefore, additional mitigation measures would not be required.

Table 4.4-5
Project Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
California Air Resources Board	
Vehicle Climate Change Standards AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in September 2004.	**Consistent** Vehicles that travel to and from the project site on public roadways would be in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Diesel Anti-Idling The CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling in July 2004.	**Consistent** Current State law restricts diesel truck idling to five minutes or less. Diesel trucks operating from and making deliveries to the project site are subject to this state-wide law. Construction vehicles are also subject to this regulation. The project would be required to comply with Downtown Plan EIR Mitigation Measure AQ-2, which states that all truck loading and unloading docks must be equipped with one 110/208-volt power outlet for every two-dock door. Diesel trucks are prohibited from idling more than 5 minutes and must be required to connect to the 110/208-volt power to run any auxiliary equipment. Signs outlining the idling restrictions area also required.
Hydrofluorocarbon Reduction 1) Ban retail sale of HFC in small cans. 2) Require that only low GWP refrigerants be used in new vehicular systems. 3) Adopt specifications for new commercial refrigeration. 4) Add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs. 5) Enforce federal ban on releasing HFCs.	**Consistent** This strategy applies to consumer products. All applicable products would be required to comply with the regulations that are in effect at the time of manufacture.

Table 4.4-5
Project Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
Alternative Fuels: Biodiesel Blends CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.	**Consistent** Diesel vehicles such as construction vehicles that travel to and from the project site on public roadways could utilize this fuel once it is commercially available. Downtown Plan EIR Mitigation Measure GHG-1(b) would require the project to use a CARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment.
Alternative Fuels: Ethanol Increased use of E-85 fuel.	**Consistent** Residents living at the project site could choose to purchase flex-fuel vehicles and utilize this fuel, which is currently available at locations in Wilmington, approximately six miles northwest of the project site. Downtown Plan EIR Mitigation Measure GHG-1(b) would require the project to use a CARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment.
Heavy-Duty Vehicle Emission Reduction Measures Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.	**Consistent** Heavy-duty vehicles for construction activities that travel to and from the project site on public roadways would be subject to all applicable CARB efficiency standards that are in effect at the time of vehicle manufacture. In addition, the project would be subject to Mitigation Measure AQ-1(a), which requires the use of 2010 and newer diesel haul trick and that all heavy-duty (50 horsepower [hp] or more) offroad vehicles to be used during construction must implement Enhanced Exhaust Control Practices. These practices include meeting Tier 4 emission standards and being outfitted with emissions control devices that reduce emissions by no less than what could be achieved by a Level 3 diesel emissions control strategy for a similar sized engine as defined by CARB regulations.
Achieve 50 Percent Statewide Recycling Goal Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.	**Consistent** According to data provided by CalRecycle, the City of Long Beach met its target disposal rates for both per resident and per employee metrics. Based on data for 2013 (the most recent year for which approved data is available), the City's per resident disposal rate was 3.9 pounds per day (ppd), half of the City's 7.6 ppd target. The City has implemented more than 40 programs designed to sustain these disposal rates.
Zero Waste – High Recycling Efforts to exceed the 50 percent goal would allow for additional reductions in climate change emissions.	**Consistent** As described above it is anticipated that the proposed project would participate in waste diversion programs. The project would also be subject to all applicable State and City requirements for solid waste reduction as they change in the future.

Table 4.4-5
Project Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
Department of Forestry	
Urban Forestry A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	**Consistent** Landscaping for new structures would result in additional planted trees throughout the project site.
Department of Water Resources	
Water Use Efficiency Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	**Consistent** The new proposed structures would be required to be consistent with CalGreen standards. As such, the proposed project would be equipped with low-flow plumbing fixtures, reducing water use.
Energy Commission (CEC)	
Building Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	**Consistent** The proposed project would be required to exceed Title 24 standards that are in effect at the time of development by 20 percent (Downtown Area Plan EIR Mitigation Measure AQ-2). The project would be equipped with equipment (e.g., HVAC systems), lighting fixtures, and lighting that exceed Title 24 requirements.
Appliance Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	**Consistent** Under State law, appliances that are purchased for the project - both pre- and post-development – would be consistent with energy efficiency standards that are in effect at the time of manufacture.
Fuel-Efficient Replacement Tires & Inflation Programs State legislation established a statewide program to encourage the production and use of more efficient tires.	**Consistent** Residents living at the project site could purchase tires for their vehicles that comply with state programs for increased fuel efficiency.
Municipal Utility Energy Efficiency Programs/Demand Response Includes energy efficiency programs, renewable portfolio standard, combined heat and power, and transitioning away from carbon-intensive generation.	*Not applicable*, but project development would not preclude the implementation of this strategy by municipal utility providers.
Municipal Utility Renewable Portfolio Standard California's Renewable Portfolio Standard (RPS), established in 2002, requires that all load serving entities achieve a goal of 20 percent of retail electricity sales from renewable energy sources by 2017, within certain cost constraints.	*Not applicable*, but the project would not preclude implementation of this strategy by Southern California Edison.

Table 4.4-5
Project Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
Municipal Utility Combined Heat and Power Cost effective reduction from fossil fuel consumption in the commercial and industrial sector through the application of on-site power production to meet both heat and electricity loads.	*Not applicable* since this strategy addresses incentives that could be provided by utility providers such as Southern California Edison and The Gas Company.
Alternative Fuels: Non-Petroleum Fuels Increasing the use of non-petroleum fuels in California's transportation sector, as recommended as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports.	**Consistent** Residents living at the project site could choose to purchase flex-fuel vehicles and utilize this fuel, which is currently available at locations in Wilmington approximately six miles northwest of the project site.
Green Buildings Initiative Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions state agencies are to take with state-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.	**Consistent** The proposed project would be required to exceed Title 24 standards that are in effect at the time of development by 20 percent (Downtown Area Plan EIR Mitigation Measure AQ-2). The 2013 Title 24 standards, which took effect on July 1, 2014, improve nonresidential energy efficiency by 30 percent compared to the current 2008 standards. The project would be required to exceed the 2016 Title 24 standards by 20 percent, which will take effect on January 1, 2017, if construction occurs any time after that date.

Table 4.4-5
Project Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
Business, Transportation and Housing	
Smart Land Use and Intelligent Transportation Systems (ITS) Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. The Governor is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity and a quality environment. Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	**Consistent** The project site is accessible via existing bus transit facilities. Long Beach Transit has more than ten bus stops within 0.1 miles of the project site.
Public Utilities Commission (PUC)	
Accelerated Renewable Portfolio Standard The Governor has set a goal of achieving 33 percent renewable in the State's resource mix by 2020. The joint PUC/Energy Commission September 2005 Energy Action Plan II (EAP II) adopts the 33 percent goal.	*Not applicable*, but project development would not preclude the implementation of this strategy by energy providers.
California Solar Initiative The solar initiative includes installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses, increased use of solar thermal systems to offset the increasing demand for natural gas, use of advanced metering in solar applications, and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	**Consistent** The project would be required to comply with Downtown Plan Mitigation Measure AQ-2, which requires the project to include such measures as photovoltaic cells on the rooftops to achieve a 25 percent reduction in electricity use on an average sunny day, in addition to exceeding Title 24 standards by 20 percent.

Table 4.4-6
Project Consistency with Applicable SCAG SCS Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
Land Use Actions and Strategies	
Encourage the use of range-limited battery electric and other alternative fueled vehicles through policies and programs, such as, but not limited to, neighborhood oriented development, complete streets, and Electric (and other alternative fuel) Vehicle Supply Equipment in public parking lots.	**Consistent** Residents living at the project site could choose to purchase flex-fuel vehicles and utilize this fuel, which is currently available at locations in Wilmington, approximately six miles northwest of the project site.
Support projects, programs, policies and regulations that encourage the development of complete communities, which includes a diversity of housing choices and educational opportunities, jobs for a variety of skills and education, recreation and culture, and a full-range of shopping, entertainment and services all within a relatively short distance.	**Consistent** The proposed project includes mixed-use buildings with residential, retail, and other commercial uses. The project also includes development of a new and relocated library and park. These uses would also be located in an urbanized area and in proximity to existing residential and commercial development. Existing public transit facilities are located within 0.1 miles of the project site. The proposed project would be consistent with efforts to provide diverse housing choices with commercial and recreational opportunities. It is assumed residents and employees would use other modes of transportation including non-auto (e.g., walking, bicycles) and public transportation.
Transportation Network Actions and Strategies	
Prioritize transportation investments to support compact infill development that includes a mix of land uses, housing options, and open/park space, where appropriate, to maximize the benefits for existing communities, especially vulnerable populations, and to minimize any negative impacts.	**Consistent** The proposed project is located in an area surrounded by existing development, and would add residential, commercial, institutional, and recreational uses. As such, the project would be infill development.
Explore and implement innovative strategies and projects that enhance mobility and air quality, including those that increase the walkability of communities and accessibility to transit via non-auto modes, including walking, bicycling, and neighborhood electric vehicles (NEVs) or other alternative fueled vehicles.	**Consistent** The proposed project is located in an urbanized area and in proximity to existing residential and commercial development. Existing public transit facilities are located within 0.1 miles of the project site. The project site would be walkable and pedestrian access to the existing transit would be available.
Collaborate with local jurisdictions to plan and develop residential and employment development around current and planned transit stations and neighborhood commercial centers.	**Consistent** The proposed project is located in an urbanized area and in proximity to existing public transit facilities. The proposed project would be consistent with efforts to support the use of public transportation.
Develop first-mile/last-mile strategies on a local level to provide an incentive for making trips by transit, bicycling, walking, or neighborhood electric vehicle or other ZEV options.	**Consistent** The proposed project is located in an urbanized area and in proximity to existing residential and commercial development. Existing public transit facilities are located near the project site. The proposed project would include pedestrian connections to the existing developed areas surrounding the site as well as access to transit.

Table 4.4-6
Project Consistency with Applicable SCAG SCS Greenhouse Gas Emission Reduction Strategies

Strategy	Project Consistency
Transportation Demand Management Actions and Strategies	
Support work-based programs that encourage emission reduction strategies and incentivize active transportation commuting or ride-share modes.	**Consistent** Downtown Plan EIR Mitigation Measure AQ-2 would require commercial development operator(s) to operate, maintain, and promote a ride-share program for employees of the various businesses. In addition, this mitigation requires the development of secure bicycle parking areas within the project site for employees and customers.
Encourage the development of telecommuting programs by employers through review and revision of policies that may discourage alternative work options.	*Not applicable*; however, occupants of the project site could telecommute as appropriate.
Clean Vehicle Technology Actions and Strategies	
Develop a Regional PEV Readiness Plan with a focus on charge port infrastructure plans to support and promote the introduction of electric and other alternative fuel vehicles in Southern California.	*Not applicable*, but project development would not preclude implementation of this strategy.

Table 4.4-7
Project Consistency with Applicable Long Beach Sustainable City Action Plan Goals

Goal	Project Consistency
Buildings and Neighborhoods	
At least 5 million square feet of privately developed LEED certified (or equivalent) green buildings by 2020	**Consistent** The proposed project is not currently designed to qualify for LEED certification. However, the project includes sustainability features that would be compatible with the general LEED certification principles such as being infill development and being located in proximity to transit stops. In addition, the proposed project would be required to exceed Title 24 standards that are in effect at the time of development by 20 percent (Downtown Area Plan EIR Mitigation Measure AQ-2). The project would be equipped with equipment (e.g. HVAC systems), lighting fixtures, and lighting that exceed Title 24 requirements. The proposed project would not conflict with the implementation of this goal.
Plant at least 10,000 trees in Long Beach by 2020	**Consistent** Landscaping for new structures and Lincoln Park would result in additional planted trees throughout the project site, thus moving the City toward this target.

Table 4.4-7
Project Consistency with Applicable
Long Beach Sustainable City Action Plan Goals

Goal	Project Consistency
50 percent of Long Beach residents work in Long Beach by 2020	**Consistent** The proposed project would provide up to 780 residential units for Long Beach residents in the Downtown Area. This would enhance local housing opportunities for Long Beach workers.
Energy	
Reduce community electricity use by 15 percent by 2020 Reduce community natural gas use by 10 percent by 2020	**Consistent** The proposed project would exceed the most recent Title 24 energy efficiency requirements by 20 percent, which would increase energy efficiency. The 2014 Title 24 standards improve nonresidential energy efficiency by 30 percent.
Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020.	**Consistent** The project would be required to comply with Downtown Plan Mitigation Measure AQ-2, which requires the project to include such measures as photovoltaic cells on the rooftops to achieve a 25 percent reduction in electricity use on an average sunny day, in addition to exceeding Title 24 standards by 20 percent.
Transportation	
Increase public transit ridership by 25 percent by 2016 Increase bike ridership from 1 percent to 10 percent by 2016	**Consistent** The proposed project is infill development in an area served by existing public transit lines and within 0.1 miles of multiple existing transit stops.
Annual reduction in average pounds of solid waste generated per person per day	**Consistent** According to data provided by CalRecycle, the City of Long Beach met its target disposal rates for both per resident and per employee metrics. Based on data for 2013 (the most recent year for which approved data is available), the City's per resident disposal rate was 3.9 pounds per day (ppd), half of the City's 7.6 ppd target and the City's per employee disposal rate was 11.8 ppd, less than half of the 25.1 ppd target. The City has implemented more than 40 programs designed to sustain these disposal rates. The proposed project would participate in City programs intended to continue solid waste diversion.

As indicated in Table 4.4-5 through Table 4.4-7, the proposed project would not conflict with applicable CAT strategies, SCAG'S SCS GHG emission reduction strategies, and the Long Beach Sustainable City Action Plan Goals.

Mitigation Measures. Mitigation is not required.

Significance after Mitigation. Impacts would be less than significant without mitigation.

b. Cumulative Impacts. As discussed in Section 3.0, *Environmental Setting*, cumulative development in Long Beach, including development facilitated by the proposed project, would add dwelling units and non-residential development that would generate GHGs from vehicle trips and other sources. Analyses of GHGs are cumulative in nature, as they affect the accumulation of greenhouse gases in the atmosphere. Projects falling below the impact thresholds discussed above would have a less than significant impact, both individually and cumulatively. As indicated in Impact GHG-1, GHG emissions associated with the proposed project would be less than significant and the project's contribution to cumulative impacts are therefore also cumulatively less than significant.

4.5 NOISE AND VIBRATION

This section addresses the impact of the noise and vibration that would be generated by the proposed project on nearby noise-sensitive land uses, as well as the effect of current and future noise and vibration levels on the proposed project.

4.5.1 Setting

a. Overview of Sound Measurement. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dB change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources such as industrial machinery. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance.

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the daytime. Two commonly used noise metrics – the Day-Night average level (Ldn) and the Community Noise Equivalent Level (CNEL) - recognize this fact by weighting hourly Leqs over a 24-hour period. The Ldn is a 24-hour average noise level that adds 10 dBA to actual nighttime (10 p.m. to 7 AM) noise levels to account for the greater sensitivity to noise during that time period. The CNEL is identical to the Ldn, except it also adds a 5 dBA penalty for noise occurring during the evening (7 PM to 10 p.m.).

b. Vibration. Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas noise is simply carried through the air. Thus, vibration is generally felt rather than heard. The ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB) in the United States. Policies and standards related to ground-borne vibration are provided in Section 8.80.200 of the Long Beach Municipal Code (LBMC), where operating or permitting the operation of any device that creates vibration above the vibration perception threshold of an individual at or beyond the property boundary of the source, if on private property, or at 150 feet from the source if on a public space or public right-of-way, is a code violation. Section 8.80.200(g) is described in more detail below under *Regulatory Setting*.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people (Federal Transit Administration, 2006). A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Consequently, the FTA recommends an 80 VdB threshold for infrequent events at residences and buildings where people normally sleep (e.g., the future on-site residences and the residences and hotels in the vicinity). In terms of ground-borne vibration impacts on structures, the FTA states that ground-borne vibration levels in excess of 100 VdB would damage fragile buildings and levels in excess of 95 VdB would damage extremely fragile historic buildings.

c. Sensitive Receptors. Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, and libraries are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than manufacturing or agricultural uses that are not subject to effects such as sleep disturbance. Noise sensitive land uses near the project area include residences, a library, and a school. The nearest existing residential receptors are located 100 feet north of the project site boundary on Third Street. The First Congregational Church of Long Beach, located at 241 Cedar Avenue, is also a sensitive receptor and is located 85 feet west of the proposed construction area near the 3rd and Pacific Block.

d. Regulatory Setting. Chapter 8.80 of the LBMC provides regulations regarding noise levels in the City. Section 8.80.160 sets exterior noise level limits for districts identified in the municipal code. The project site is located in District 2. The following exterior noise level standards would therefore apply to the project site:

- *Daytime (7:00 a.m. – 10:00 p.m.): 60 dBA*
- *Nighttime (10:00 p.m. – 7:00 a.m.) 55 dBA*

Receptors to the northwest of the project site, west of Queens Way, are located in District 1 and the following exterior noise level standards are applicable to those receptors:

- *Daytime (7:00 a.m. – 10:00 p.m.): 50 dBA*
- *Nighttime (10:00p.m. – 7:00 a.m.) 45 dBA*

Section 8.80.150 states that the noise standards provided in Section 8.80.160 shall be applied as follows:

> *No person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the City or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:*
>
> *1) The noise standard for that land use district as specified in Table A in Section 8.80.160 for a cumulative period of more than thirty (30) minutes in any hour; or*
>
> *2) The noise standard plus five (5) decibels for a cumulative period of more than fifteen (15) minutes in any hour; or*
>
> *3) The noise standard plus ten (10) decibels for a cumulative period of more than five (5) minutes in any hour; or*
>
> *4) The noise standard plus fifteen (15) decibels for a cumulative period of more than one (1) minute in any hour; or*
>
> *5) The noise standard plus twenty (20) decibels or the maximum measured ambient, for any period of time.*

Section 8.80.170 of the LBMC sets interior noise levels for specific types of development, as shown in Table 4.5-1.

Table 4.5-1
City of Long Beach Interior Noise Level Standards

Land Use	Time Interval	Allowable Noise Level (dBA)
Residential	10:00 p.m. – 7:00 a.m.	35
	7:00 a.m. – 10:00 p.m.	45
School	7:00 a.m. – 10:00 p.m. (While school is in session)	45
Hospital, designated quiet zones, and noise sensitive zones	Anytime	40

Source: Long Beach Municipal Code Sec. 8.80.170

Section 8.80.202 of the Long Beach Municipal Code sets restrictions on construction activities as follows:

- *No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. and 7:00 a.m. the following day on weekdays or federal holidays, except for emergency work authorized by the Building Official.*
- *No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday and after 6:00 p.m. on Saturday, except for emergency work authorized by the Building Official.*
- *No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity at any time on Sunday, except for emergency work authorized by the Building Official or except for work authorized by permit issued by the Noise Control Officer.*

The Long Beach Municipal Code 8.80.200(n) requires that air conditioning equipment generate noise levels of no more than 55 dBA at any point on a neighboring property line. This standard would apply to all air conditioning and refrigerating equipment.

The Long Beach General Plan Noise Element provides outdoor and indoor noise standards for different types of land uses, as summarized in Table 4.5-2.

Table 4.5-2
City of Long Beach General Plan Noise Level Standards

Land Use	Outdoor			Indoor (Ldn)
	Peak	L10	L50	
Residential (7:00 a.m.–10:00 p.m.)	70	55	45	45
Residential (10:00 p.m.–7:00 a.m.)	60	45	35	35
Commercial (any time)	75	65	55	-
Industrial (any time)	85	70	60	-

Source: Long Beach General Plan Noise Element.

The Long Beach General Plan Noise Element also contains the following goal related to transportation noise.

Goal 2: Discouraging within transportation noise zones the development of noise sensitive uses that cannot be sufficiently insulated against externally generated noise at a reasonable cost.

The Long Beach General Plan Noise Element contains the following goals related to population and housing.

Goal 3 To reduce the level of noise generated by the population into the environment of the City.

Goal 6 To require better sound deadening design on new housing units where acoustical problems could develop.

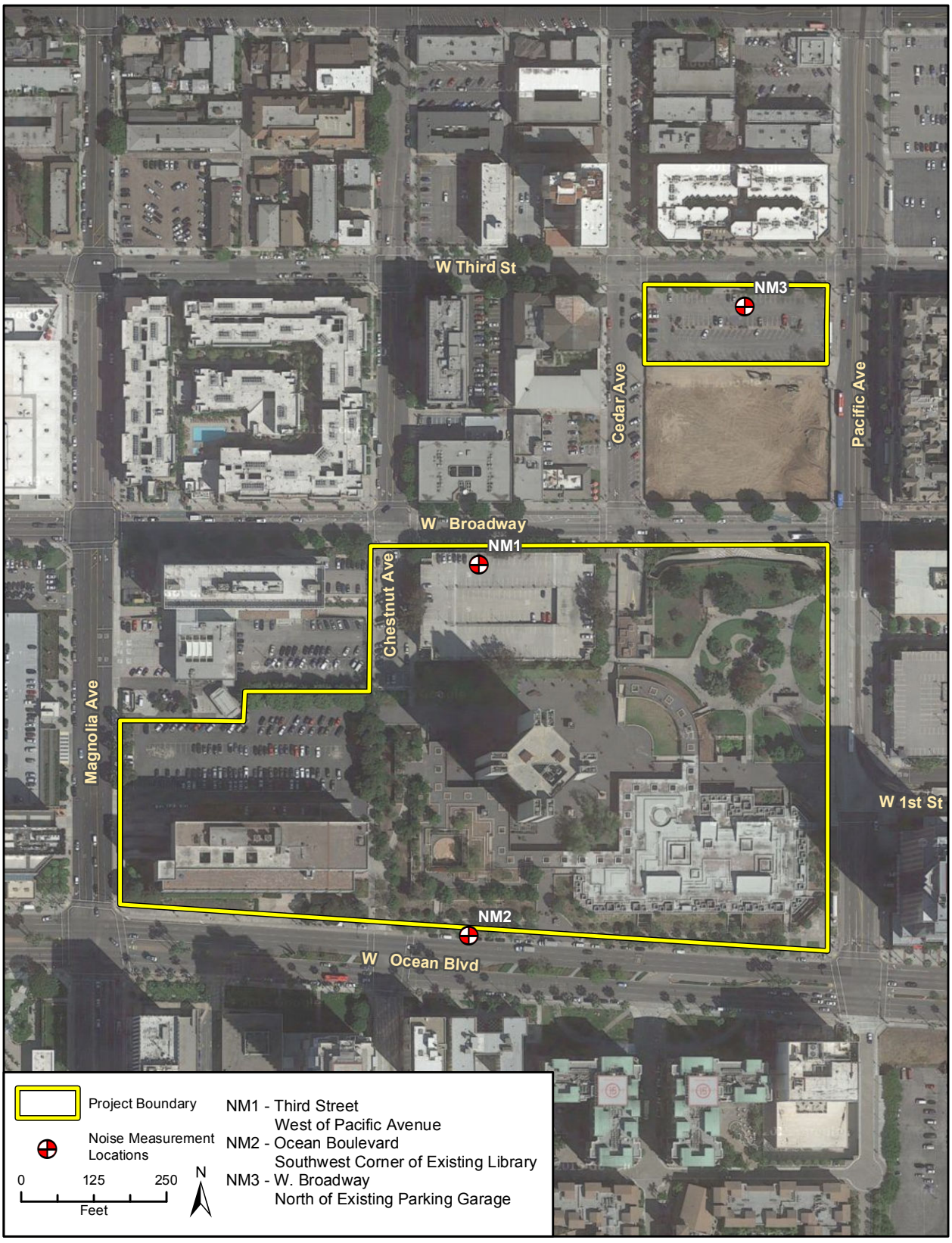
Goal 7 To reduce the level of incoming and outgoing noise into and from residential dwellings within the City.

The California Department of Health Services establishes noise criteria for various land uses. Noise exposure for a residential land use is "normally acceptable" when the CNEL at exterior residential locations is equal or below 60 dBA, "conditionally acceptable" when the CNEL is between 60 and 70 dBA, "normally unacceptable" when the CNEL is between 70 and 75 dBA, and "clearly unacceptable" when the CNEL is greater than 75 dBA.

Section 8.80.200(g) of the Long Beach Municipal Code regulates vibration as follows:

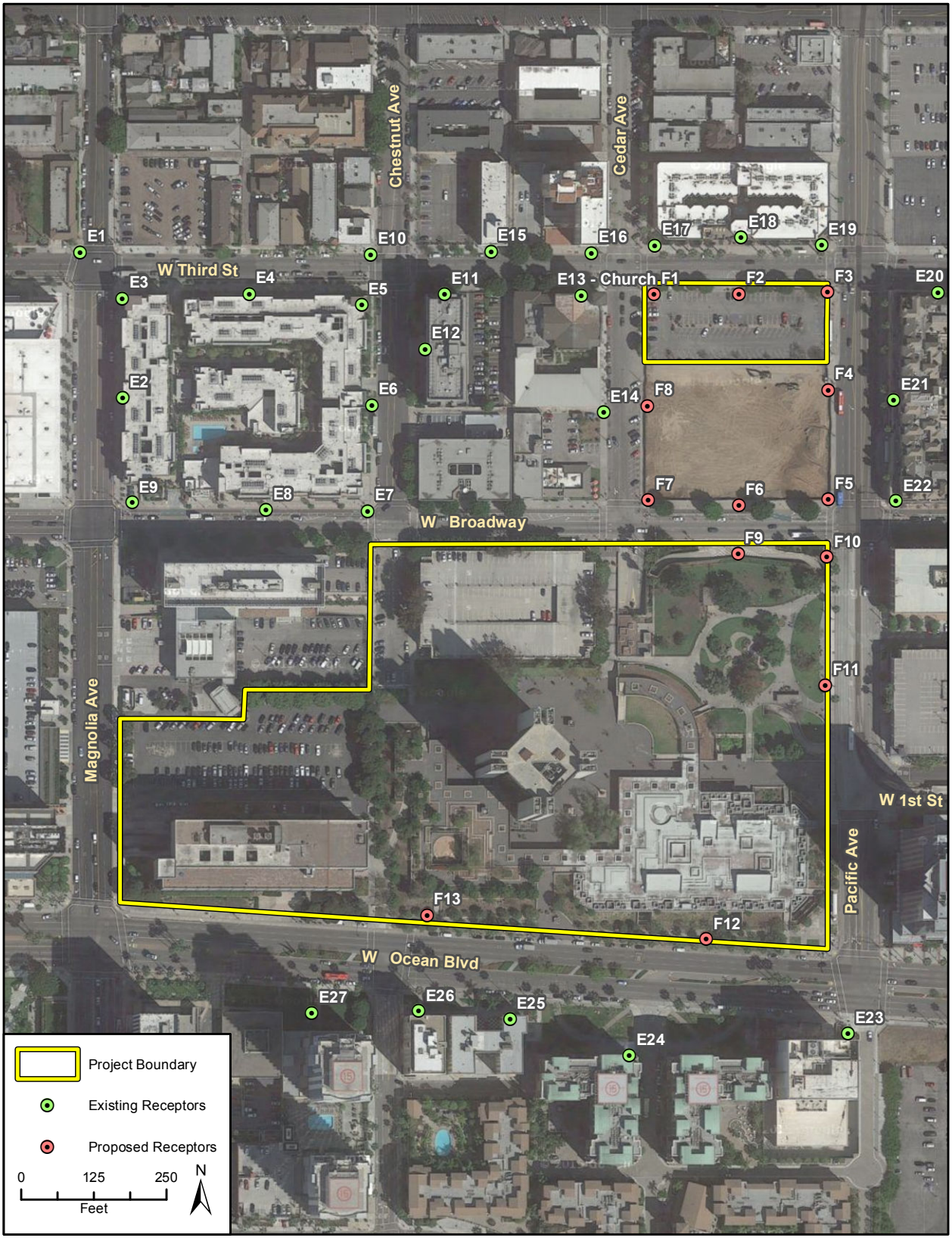
Operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty feet (150') (forty-six (46) meters) from the source if on a public space or public right-of-way. For the purposes of this subsection, "vibration perception threshold" means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such directed means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be .001 g's in the frequency range 0 – 30 hertz and .003 g's in the frequency range between thirty and one hundred hertz.

e. Existing Noise Sources. The most common source of noise in the project site vicinity is traffic on surrounding roads. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create sustained noise levels. Ambient noise levels would be expected to be highest during the daytime and rush hour unless congestion slows speeds substantially. Existing noise sources within the project site consist of commercial and government buildings, as well as the existing library and park. To determine ambient noise levels at nearby sensitive receptors, three 15-minute noise measurements were taken between 7:00 a.m. and 9:00 a.m. (peak hour) on May 20, 2015 using an ANSI Type II integrating sound level meter (refer to Appendix D for noise measurement data). Table 4.5-3 lists the ambient noise levels measured at these locations. See Figure 4.5-1 for the locations of noise measurements and Figure 4.5-2 for the locations of existing and proposed sensitive receptors within the project area.



Imagery provided by Google and its licensors © 2015.

Noise Measurement Locations Figure 4.5-1



Imagery provided by Google and its licensors © 2015.

Modeled Existing and Future Receptor Locations Figure 4.5-2

Table 4.5-3
Noise Measurements

Measurement Number	Measurement Location	Distance to Nearest Sensitive Receptor	Distance from Centerline of Roadway	Sample Time	Leq (dBA)
1	Third Street west of Pacific Avenue	80 ft (to apartments on Third St.)	40 ft	7:25 a.m.– 7:40 a.m.	64.9
2	Ocean Boulevard on the southwest corner of the existing library	100 ft (to existing library)	50 ft	8:00 a.m. – 8:15 a.m.	70.8
3	W. Broadway, north of the existing parking garage	230 ft (to apartments on W. Broadway)	35 ft	8:30 a.m. – 8:45 a.m.	68.5

All measurements were taken using ANSI Type II Integrating sound level meter.
Refer to Figure 4.5-1 for noise measurement locations.
Refer to the Appendix D for noise monitoring data sheets

Long Beach Municipal Airport is located approximately four miles northeast of the project site, and the project site is outside its Airport Influence Area (Los Angeles County Airport Land Use Commission, 2003).

LLG prepared the *Transportation Impact Analysis* for the project and analyzed local roadway segments and intersections in the surrounding roadway network and provided average daily trip (ADT) rates and peak hour trips (see Appendix E). Using the trip data, existing traffic-generated noise levels along these segments were estimated using the U.S. Department of Transportation, Federal Highway Administration's (FHWA) Traffic Noise Model Version 2.5 (FHWA, 2004). Table 4.5-4 shows the estimated noise levels at existing sensitive receptors near the project site. Each of the sensitive receptor locations listed is the edge or corner of an existing residential building, with the exception of "Cedar – Church btwn Third and Broadway," which is the First Congregational Church of Broadway.

Table 4.5-4
Existing Traffic-Generated Noise

Receptor Location	Modeled Noise Level Leq (dBA)
Broadway btwn Chestnut and Magnolia	69.3
Broadway NE Corner of Broadway and Magnolia	71.9
Broadway NW Corner of Chestnut and Broadway	69.2
Cedar - Church btwn Third and Broadway	65.8
Chestnut btwn Third and Broadway	65.3
Chestnut E of Chestnut btwn Third and Broadway	64.1
Magnolia btwn Third and Broadway	70.0
Ocean btwn Cedar and Chestnut	71.8
Ocean btwn Chestnut and Magnolia	70.3
Ocean NE Corner of Ocean and Chestnut	71.9
Ocean NW Corner of Ocean and Cedar	69.2
Ocean NW Corner of Ocean and Pacific	71.8
Pacific E of Pacific btwn Third and Broadway	68.4
Pacific NE Corner of Pacific and Broadway	71.1
Third btwn Cedar and Chestnut	69.3
Third btwn Magnolia and Chestnut	67.5
Third E of Pacific	68.0
Third NE Corner of Pacific and Cedar	67.9
Third NE Corner of Third and Magnolia	69.1
Third North of Third West of Pacific	69.5
Third NW Corner of Third and Cedar	70.2
Third NW Corner of Third and Chestnut	70.5
Third NW Corner of Third and Magnolia	70.9
Third NW Corner of Third and Pacific	70.9
Third SE of Chestnut and Pacific Intersection	67.4
Third SW Corner of Third and Cedar	69.4
Third SW Corner of Third and Chestnut	68.3

Refer to Appendix D for these estimates. Calculated using the FHWA Traffic Noise Model.

Modeled noise levels range from 64.1 dBA to 71.9 dBA for existing sensitive receptors. The highest modeled noise level was identified at Ocean on the northeast corner of Ocean and Chestnut and at Broadway on the northeast corner of Broadway and Magnolia. Modeled noise exceeds the measured noise levels at the same locations because the model includes the greatest amount of traffic observed during PM peak hours, whereas the measurements were taken during AM peak hour and traffic was slightly lower. Nonetheless, the noise levels at the measurement locations indicate that the model is an appropriate tool for determining existing and future noise levels for this area.

4.5.2 Previous Environmental Review

The Long Beach Downtown Plan EIR examined the noise setting of the region and the potential impacts associated with development of the entire Downtown Plan area. The EIR determined that construction noise impacts associated with the Downtown Plan would be significant but mitigable because Downtown Plan implementation would expose businesses and residences throughout the Downtown Plan Area to temporary elevated levels of noise throughout years of construction. The project would be subject to the mitigation measures identified in the EIR, specifically Noise-1(a), which required noise reduction techniques such as equipment mufflers, "quiet" construction equipment models, prohibition of idling, and routing of construction-related traffic, as well as Noise-1(b), which requires the construction of temporary noise barriers and a project-specific noise analysis to determine further necessary noise reduction techniques.

The Downtown Plan EIR determined that noise associated with traffic generated by the Downtown Plan would be less than significant as it affects existing sensitive receptors, but that traffic noise and land use compatibility impacts would be significant but mitigable for proposed receptors. Operation of the proposed project would generate traffic and would locate sensitive receptors, including residences and a library, in areas that could be exposed to levels of noise that exceed applicable standards. The project would be subject to the mitigation measures identified in the EIR, specifically Noise-5, which requires a site-specific noise study for projects in areas where new residential development would be exposed to noise levels exceeding 65 dBA.

The project includes the demolition of the former Long Beach Courthouse. The Long Beach Courthouse Demolition Project was studied in a Draft EIR (SCH# 2014051003) that was circulated in October and November of 2014, but was not adopted. The Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to noise and vibration would be significant and unavoidable despite implementation of mitigation involving the erection of temporary sound barriers, installation of mufflers, use of electric equipment, and the establishment of a noise disturbance coordinator. If demolition occurs by implosion, the Downtown Plan EIR recommended mitigation requiring the development and approval of a Noise Control Plan and a Vibration Control Plan to protect human health and adjacent buildings.

The Downtown Plan EIR determined that construction of the Downtown Plan would include vibration sources, including pile driving that would result in a significant and unavoidable impact. The project would be subject to EIR Measure Noise-2(a), which requires a site-specific vibration study for all construction projects in order to determine the area of impact and identify appropriate mitigation measures.

4.5.3 Impact Analysis

a. Methodology and Thresholds of Significance.

Methodology. The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with operation of the proposed project. Construction noise estimates are based upon noise levels reported by the Federal

Transit Administration (FTA), Office of Planning and Environment (FTA, May 2006), and the distance to nearby sensitive receptors. Reference noise levels from that document were then used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dBA per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual construction noise.

To determine ambient noise levels at nearby sensitive receptors, Rincon Consultants, Inc. took three 15-minute noise measurements between 7:00 a.m. and 9:00 a.m. (peak hour) on May 20, 2015, using an ANSI Type II integrating sound level meter (see Figure 4.5-1 above for noise measurement locations relative to the project site; see Appendix D for noise measurement data). These locations were selected to represent ambient noise levels experienced by sensitive receptors near the project site, as well as noise levels generated by land uses similar to the project. At each location, consideration was given to site-specific characteristics, and the sound level meter was placed away from walls and topographic features which might skew noise measurements. The noise measurements recorded the equivalent noise level (Leq) at each location.

Rincon calculated noise levels associated with existing and future traffic along local roadways using the U.S. Department of Transportation, Federal Highway Administration's (FHWA) Traffic Noise Model Version 2.5 (FHWA, 2004) (noise modeling data sheets can be viewed in Appendix D) and the *Transportation Impact Analysis* (see Appendix E and Section 4.6, *Transportation and Traffic*). Roadway noise level estimates do not account for all intervening barriers, such as trees or walls, which may shield individual receptors from the noise source. Therefore, the levels presented represent a conservative estimate of the noise levels that would be experienced at individual receptor locations.

The future exterior noise levels associated with traffic for the proposed residences and library were also calculated using the FHWA Traffic Noise Model Version 2.5 (FHWA, 2004). The interior noise level is the difference between the projected exterior noise level at the structure's façade and the noise reduction provided by the structure itself. Typical residential construction in California provides approximately 15 dBA of noise reduction from exterior noise sources with windows partially open, and approximately 20 to 25 dBA of noise reduction with windows kept closed (DOT, 2009). For this analysis, interior noise level was determined by subtracting the estimated noise reduction achieved by the building shell from the estimated exterior noise level of the project site.

Significance Thresholds. Pursuant to Appendix G of the *State CEQA Guidelines*, potentially significant impacts would occur if the project would result in any of the following conditions:

- *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;*
- *Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;*

- *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;*
- *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;*
- *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels; and/or*
- *For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.*

As discussed in the Initial Study (Appendix A), the project site is not located in the vicinity of a private airstrip nor is it located within two miles of an airport or within an airport land use plan. Impacts related to airport noise would therefore be less than significant and are not discussed further in this section. The SEIR analyzes potential temporary and permanent impacts from construction and operation of the proposed project, including potential vibration impacts.

Existing off-site development would primarily be affected by potential increased noise associated with increased traffic volumes attributable to the project at various roadway segments. Impacts to existing development are considered significant if project-generated traffic results in exposure of sensitive receptors to an unacceptable increase in noise levels. The level of significance changes with increasing noise exposure, such that smaller changes in ambient noise levels result in significant impacts at higher existing noise levels. Table 4.5-5 shows the relevant significance thresholds for increases in traffic related noise levels caused either by the project alone or by cumulative development.

Impacts related to operational on-site activities and traffic noise would also be significant if project-related activities cause occupied sensitive receptors to experience noise levels exceeding the standards shown in Table 4.5-5.

Table 4.5-5
Significant Change in Ambient Noise Levels

Existing Ambient Noise Level, CNEL/Ldn	Significant Increase
< 60 dBA	+ 5 dBA or greater
> 60 dBA	+ 3 dBA or greater

Source: Long Beach Downtown Community Plan – Noise Impact Analysis (Appendix F of the Long Beach Downtown Plan EIR)

Impacts related to construction would be significant if project-related activities cause occupied sensitive receptors to experience noise levels exceeding the following federal noise standards shown in Table 4.5-6 or if it would occur during hours when construction activity is prohibited under the Long Beach Municipal Code (see *Regulatory Setting*).

Table 4.5-6
Construction Noise Level Limits

Land Use	8-hour Noise Limit (dBA Leq)
Residential	80
Commercial	85
Industrial	90

Source: Federal Transit Administration (FTA). Transit Noise and Vibration Impact Assessment. May 2006.

b. Project Impacts and Mitigation Measures.

CEQA Checklist Threshold	*Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*
CEQA Checklist Threshold	*A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*
Quantitative Threshold	*See Table 4.5-6*

Impact N-1 **Construction-related activities associated with the proposed project would generate noise that could exceed City of Long Beach standards at existing receptors. Residential uses proposed by the project may also be exposed to noise levels that exceed City standards. The Downtown Plan EIR determined that construction associated with buildout of the Downtown Plan would result in a potentially significant impact unless mitigation is incorporated. The proposed project would contribute to this impact and mitigation would not be feasible to reduce the impact to a less than significant level. This is a Class I, *significant and unavoidable* impact.**

Construction would not cause permanent impacts since it would be temporary and daily construction activities would be limited by the City's Noise Ordinance (Section 8.80.202) to less noise sensitive daytime hours. Construction noise impacts primarily result when construction activities occur during times of day when people are most sensitive to noise (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction durations last over extended periods of time.

As discussed in the Downtown Plan EIR, adoption of the Downtown Plan could subject nearby residents to excessive noise levels. The Downtown Plan EIR includes Mitigation Measure Noise-1(a), which requires that: construction equipment be equipped with mufflers; "quiet" models of stationary equipment be used; stationary noise-generating equipment be located as far as possible from receptors; engines do not idle for longer than five minutes; as well as other requirements to reduce noise impacts from construction. The Downtown Plan EIR also includes Mitigation Measure Noise-1(b), which requires construction of temporary noise barriers around construction sites within 300 feet of operational businesses, residences, and other-noise sensitive land uses. Noise-1(b) also requires that if a project-specific noise analysis determines that the barriers described above would not be sufficient to avoid a significant construction noise impact, a temporary sound control blanket must be erected along building façades facing construction sites.

Temporary noise impacts associated with construction of the proposed project may adversely affect adjacent sensitive receptors. The grading/excavation phase of project construction tends to create the highest construction noise levels because of the operation of heavy equipment. As shown in Table 4.5-7, the maximum noise level associated with heavy equipment at construction sites can range from about 74 to 88 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and phase of construction (FTA, 2006). During grading operations, equipment is dispersed in various portions of the site in both time and space. Due to site and equipment limitations, only a limited amount of equipment can operate near a given location at a particular time.

Construction noise levels would diminish at approximately 6 dBA per doubling of distance. Table 4.5-7 shows typical maximum construction noise levels at various distances from construction activity. The nearest existing sensitive receptor is the First Congregational Church of Long Beach, which is approximately 85 feet from the nearest proposed construction areas; however, construction would not occur on Sunday mornings when the church would be in use and, therefore, would not impact this receptor. The nearest sensitive receptor that would be in use during construction activities is a residential building located 100 feet from the project site. The maximum noise level at that location would be about 82 dBA. The residential component of the project is concentrated on the 3rd and Pacific Block, which is located approximately 300 feet north of the where construction on the remainder of the project site would occur, and on Center Block, operation of which would occur after all other components are constructed. Therefore, the proposed library would be the only onsite sensitive receptor that would be located adjacent to project construction. The library could be approximately 50 feet from construction activity and could experience a maximum noise level of approximately 88 dBA during construction of both the Center Block and the Lincoln Park and New Library Block.

Table 4.5-7
Typical Construction Equipment Noise Levels

Equipment	Noise Level at 50 feet from Source	Noise Level at 100 feet from Source	Noise Level at 300 feet from Source
Augur Drill Rig	84	78	69
Backhoe	78	72	63
Compactor (ground)	83	77	68
Dozer	82	76	67
Dump Truck	76	70	61
Excavator	81	75	66
Flat Bed Truck	74	68	59
Front End Loader	79	72	63
Generator	81	75	66
Grader	83	77	68
Jackhammer	88	82	73
Pickup Truck	75	69	60
Pneumatic Tools	85	79	70
Roller	80	74	65
Scraper	84	78	69
Warning Horn	83	77	68
Welder/Torch	74	68	59

Source: FTA, 2006.

A temporary noise barrier, as required by Mitigation Measure Noise-1(b) would attenuate construction noise at locations for which the barrier breaks the line of sight between the source and the receptor by up to 10 dBA (FHWA, 2001). However, given the height of the surrounding buildings, which includes residential buildings of over ten stories, a temporary noise barrier would not break the line-of-sight between the construction activities and upper-floor receptors. In order for a barrier to successfully reduce noise at a receptor, it must disrupt the line-of-sight and directly shield the receptor. It would not be feasible to construct a noise barrier tall enough to shield high-rise buildings. Therefore, while Mitigation Measure Noise-1(b) would reduce noise levels to a less than significant level for receptors located on the first floor and would be implemented as a requirement of the Downtown Plan EIR, it would not be sufficient to reduce noise levels to less than 80 dBA Leq for eight hours for noise-sensitive uses located on higher floors. Therefore, impacts would significant and unavoidable at existing and proposed residential units.

Temporary noise from construction would exceed the ambient noise levels near the project site, which are between 65 and 71 dBA. Therefore, City noise standards would be exceeded, despite implementation of mitigation measures Noise-1(a) and Noise-1(b). This would be a significant and unavoidable impact.

Furthermore, as described in the Long Beach Courthouse Demolition Project Draft EIR, demolition of the former Long Beach Courthouse would result in impacts related to noise that would be significant and unavoidable despite implementation of mitigation involving the erection of temporary sound barriers, installation of mufflers, use of electric equipment, and the establishment of a noise disturbance coordinator. If demolition occurs by implosion, the Downtown Plan EIR recommended mitigation requiring the development and approval of a Noise Control Plan to protect human health and adjacent buildings. Nonetheless, mitigation required by the Downtown Plan EIR and Long Beach Courthouse Demolition Project Draft EIR would not reduce impacts related to construction to a less than significant level. Due to the height of the surrounding residential and commercial buildings, and the potential for demolition to occur by implosion, mitigation would not be feasible for all receptors. Impacts would be significant and unavoidable.

Mitigation Measures. Along with the mitigation required by the Downtown Plan EIR, the following mitigation would be required to reduce impacts from the demolition of the former Courthouse to the extent feasible.

Noise-1 **Noise Control Plan.** If demolition occurs by implosion, the City shall approve a Noise Control Plan that protects public health and includes:

- A site-specific map that delineates the hearing damage radius;
- Safety measures to ensure that community members would not be within this radius during the implosion;
- Control measures designed by an implosion expert to reduce noise at the source of the implosion; and
- A statement that all demolition-related damage shall be repaired.

Significance After Mitigation. The Downtown Plan EIR determined that construction associated with buildout of the Downtown Plan would result in a potentially significant impact unless mitigation is incorporated. The proposed project would contribute to this impact and mitigation would not be feasible to reduce impacts to a less than significant level. The Long Beach Courthouse Demolition Project Draft EIR determined that construction associated with the demolition of the Courthouse would result in a significant and unavoidable noise impact; the proposed project would contribute to that impact. Therefore, impacts associated with construction noise would be significant and unavoidable.

CEQA Checklist Threshold	*Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*
CEQA Checklist Threshold	*A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*
CEQA Checklist Threshold	*A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.*
Quantitative Threshold	*See Table 4.5-1 and Table 4.5-2*

Impact N-2 Operational activities associated with the proposed project would generate noise that could exceed City of Long Beach standards at existing receptors. Residential uses proposed by the project may also be exposed to noise levels that exceed City standards. The Downtown Plan EIR determined that operation associated with buildout of the Downtown Plan would result in a potentially significant impact unless mitigation is incorporated. The proposed project would contribute to this impact and mitigation would be required. This is a Class II, *significant but mitigable* impact.

As discussed in the Downtown Plan EIR, point source noise levels associated with commercial uses have the potential to expose nearby existing and future noise sensitive receptors to excessive noise levels that violate the City Noise Ordinance and that would permanently or temporarily exceed existing ambient noise levels. Downtown Plan EIR Mitigation Measure Noise-6 requires a site-specific noise study prior to issuance of building permits in areas where new residential development would be located adjacent to commercial uses to determine the area of impact and to present appropriate mitigation measures. The mitigation measures required as a result of the noise study may include:

- *Require the placement of loading and unloading areas so that commercial buildings shield nearby residential land uses from noise generated by loading dock and delivery activities. If necessary, additional sound barriers shall be constructed on the commercial sites to protect nearby noise sensitive uses.*
- *Require the placement of all commercial HVAC machinery to be placed within mechanical equipment rooms wherever possible.*
- *Require the provision of localized noise barriers or rooftop parapets around HVAC, cooling towers, and mechanical equipment so that line-of-sight to the noise source from the property line of the noise sensitive receptors is blocked.*

The buildings proposed on the 3rd and Pacific Block, as well as the Center Block, would locate residential uses adjacent to commercial uses. Noise sources associated with commercial land uses include mechanical equipment operation, public address systems, parking lot noise (e.g., opening and closing of vehicle doors, people talking, car alarms), delivery activities (e.g., use of

forklifts, hydraulic lifts), trash compactors, and air compressors. Noise from such equipment can reach intermittent levels of approximately 90 dBA, 50 feet from the source (City of Long Beach, 2011). These elevated noise levels, which have the potential to be generated by commercial uses within mixed use land use designations, would expose nearby noise sensitive land uses (e.g., residential units both existing and proposed) to excessive noise levels that violate the City Noise Ordinance and permanently increase noise levels above ambient levels.

The Third and Pacific Block includes commercial uses on the first floor of the proposed buildings. The nearest sensitive receptor to the Block is the First Congregational Church of Long Beach, which is located 85 feet west. However, the church would be occupied on Sunday mornings, at which time the commercial uses would not generate high levels of noise. The residential building located 100 feet north across Third Street is the nearest sensitive receptor that would be occupied. While the proposed commercial uses are not expected to generate high levels of noise, the highest noise generator would be the loading and unloading areas for trucks. Loading/unloading areas could be located 100 feet from the nearest residences. Thus, point source noise levels associated with commercial land uses could potentially expose nearby existing noise sensitive receptors to excessive noise levels that violate the City Noise Ordinance and mitigation would be required to reduce these impacts.

The Third and Pacific Block would include residential uses above the commercial uses described above. The proposed residential uses could also be exposed to intermittent levels of up to 90 dBA, 50 feet from the source as a result of the commercial activities; therefore, mitigation would be required to reduce these impacts for proposed receptors as well.

Relocation of the park would place it in closer proximity to the residential uses that are south of Ocean Boulevard (approximately 150 feet away). While there may be periodic events in the park that generate noise, the park would not generally generate noise that would impact sensitive users. This impact would be less than significant.

Mitigation Measures. The following mitigation measures would be required to reduce operational noise impacts to existing and proposed receptors to a less than significant level.

Noise-2(a) **Loading Areas.** The applicant shall submit site plans to the Department of Development Services showing that all loading and unloading areas would be oriented away from existing sensitive receptors and/or shielded by the proposed buildings such that the line-of-sight would be broken.

Noise-2(b) **Sound-Rated Windows and Glass Doors Near Commercial Uses.** The applicant shall install sound-rated windows and sliding glass doors on all residential units that are within 50 feet of commercial uses. Windows shall be at least STC 35 to ensure that commercial activities do not result in interior noise levels exceeding 35 dBA when the windows are closed.

Significance After Mitigation. The Downtown Plan EIR determined that operation associated with buildout of the Downtown Plan would result in a potentially significant impact unless mitigation is incorporated. The proposed project would contribute to this impact and mitigation would be required to reduce impacts to a less than significant level.

CEQA Checklist Threshold	*Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.*
Quantitative Threshold	*80 VdB for residences and buildings where people normally sleep. 100 VdB for damage to fragile buildings (LBMC 8.80.200(g); Federal Transit Administration, May 2006).*

Impact N-3 Construction-activities associated with the proposed project could generate ground-borne vibration. The Downtown Plan EIR and Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to construction-generated vibration would be significant and unavoidable. The proposed project would contribute to this impact and construction-related vibration would therefore be a Class I, *significant and unavoidable* impact.

As discussed in the Downtown Plan EIR, adoption of the Downtown Plan could subject nearby residents to excessive levels of vibration. The Downtown Plan EIR includes Mitigation Measure Noise-2(a), which requires that the City review all construction projects for potential vibration-generating activities from demolition, excavation, pile–driving, and construction within 100 feet of existing structures and require site-specific vibration studies to be conducted by a qualified structure engineer in order to determine the area of impact and identify appropriate mitigation measures. Mitigation Measure Noise-2(b) requires that construction near schools that generates vibration exceeding the "vibration perception threshold" be scheduled at a time when school is not in session. Because the nearest school, Edison Elementary School is 2,250 feet northwest of the project site, Noise-2(b) would not be required for the proposed project.

The Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to vibration would be significant and unavoidable despite implementation of mitigation measures if demolition occurs by implosion. The Downtown Plan EIR recommended mitigation requiring the development and approval of a Vibration Control Plan to protect human health and adjacent buildings if demolition occurs by implosion.

Project construction activities would result in vibration that may be felt on properties in the immediate vicinity of the project site, as commonly occurs with construction projects. Table 4.5-8 identifies various vibration velocity levels for different types of construction equipment. Pile-driving would not be required for the proposed project. Project construction would likely involve the use of bulldozers and jackhammers on the project site for all building elements. Additionally, loaded trucks carrying construction materials would operate on the project site and some surrounding streets during construction.

Table 4.5-8
Vibration Source Levels for Construction Equipment

Equipment	Approximate VdB					
	10 Feet	40 Feet	75 Feet	100 Feet	200 Feet	300 Feet
Large Bulldozer	97	79	73	69	60	55
Loaded Trucks	93	77	71	68	59	54
Jackhammer	87	71	65	61	52	47
Small Bulldozer	66	49	43	40	31	26

Source: FTA, 2006.

None of the proposed project components would require use of a large bulldozer within 40 feet of an existing or proposed structure that would include residential uses. Therefore, vibration levels would not exceed the vibration threshold established by the FTA of 80 VdB for residences and buildings where people normally sleep. No new impact would occur and impacts would be less than significant.

As described above, impacts related to vibration would be significant and unavoidable despite implementation of mitigation measures if demolition of the former Courthouse occurs by implosion. Implosion is not included in the vibration estimates shown in Table 4.5-8 above. The proposed project includes the demolition of the former Courthouse, as well as other existing structures. Therefore, impacts would be significant and unavoidable.

Mitigation Measures. Along with the mitigation required by the Downtown Plan EIR, the following mitigation would be required to reduce impacts from the demolition of the former Courthouse to the extent feasible.

Noise-3 **Vibration Control Plan.** If demolition occurs by implosion, the City shall approve a Vibration Control Plan that protects public health and adjacent buildings, and includes:

- A site-specific estimate of the potential zones of vibration perceptibility and building damage;
- A pre-construction survey to assess the foundations and facades of buildings within the damage zone;
- A post-construction survey to assess damage, if any, caused by implosion; and
- A statement that all demolition-related damage shall be repaired.

Significance After Mitigation. The proposed project would contribute to the significant and unavoidable impact as described in the Long Beach Courthouse Demolition Project Draft EIR. Therefore, project impacts would be significant and unavoidable.

CEQA Checklist Threshold	*Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.*
Quantitative Threshold	*80 VdB for residences and buildings where people normally sleep. 100 VdB for damage to fragile buildings (LBMC 8.80.200(g); Federal Transit Administration, May 2006).*

Impact N-4 Operational activities associated with the proposed project could generate ground-borne vibration. The Downtown Plan EIR determined that impacts related to operational vibration would be less than significant. The proposed project would not result in additional impacts beyond those determined in the Downtown Plan EIR and operational vibration would therefore be a Class III, *less than significant* impact.

The Downtown Plan EIR determined that heavy trucks used for delivery and distribution of materials to and from commercial sites generally operate at low speeds while on the commercial site; and the operational characteristics of mechanical equipment and distribution methods used for general commercial land uses would not result in excessive ground-borne vibration levels.

The types of tenants that would occupy commercial spaces and the number of trucks that would visit these facilities on any given day were not known at the time the Downtown Plan was analyzed in the Downtown Plan EIR. However, it was anticipated that the types of commercial uses proposed for the Downtown Plan Area would not involve large-scale trucking operations. Linscott, Law, and Greenspan, Engineers estimates that the project would accommodate approximately 83 trucks per day. These truck trips would be distributed throughout the project area to the multiple proposed commercial uses. Therefore, operational noise associated with heavy trucks would not generate a substantial level of ground-borne vibration at any sensitive receptors and no new impacts would result from the proposed project.

Mitigation Measures. No mitigation would be required.

Significance After Mitigation. Impacts would be less than significant without mitigation. The Downtown Plan EIR determined that operational vibration impacts would be less than significant. Impacts would be less than significant (Class III).

CEQA Checklist Threshold	*A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*
Quantitative threshold	*See Table 4.5-5 above.*

Impact N-5 Traffic generated by the proposed project is not anticipated to result in noise level increases along roadways in the project vicinity. Traffic-related increases in noise would not exceed the City's threshold at sensitive receptors along roadway segments. The Downtown Plan EIR also determined that traffic-generated noise increases resulting from the Downtown Plan would be less than significant. This is a Class III, *less than significant* impact.

The Downtown Plan EIR determined that traffic-generated noise increases resulting from the Downtown Plan would be less than significant. The traffic noise level increases directly attributable to the project were estimated to be no greater than 1 dBA, which would not be perceptible and would be less than the 3-dBA significance criterion.

Development of the proposed project would increase the number of vehicle trips to and from the site, which would increase traffic noise on surrounding roadways within the vicinity of the project site. The *Transportation Impact Analysis* prepared for the proposed project (Shane Green, personal communication, June 2015; see Appendix E) determined the existing and future traffic levels on Third Street, Broadway, Ocean Boulevard, Magnolia Avenue, Chestnut Avenue, Cedar Avenue, Pacific Avenue, and First Street, as well as the traffic levels expected as a result of the proposed project. These traffic levels were used to determine existing and potential future sound levels at existing sensitive receptors along these roadways, including residences and the First Congregational Church of Long Beach, located at 241 Cedar Avenue.

These estimates are based on noise modeling using the FHWA Traffic Noise Model. The fleet mix for vehicle trips along the roadways was estimated at between 86 to 95% passenger vehicles, 2.5% light- and medium-duty trucks, 2.5% heavy-duty trucks, and between 0 to 9% buses. This estimate is considered reasonable for these roadways based on the urban/ downtown nature of the area, as well as the actual bus schedule. The sensitive receptors closest to the roadways were selected to determine the highest noise levels that would occur at receptors located along these roadways. Receptors that were not modeled would experience the similar or lower increases in noise than those receptors that were modeled based on their proximity to the roadways. Table 4.5-9 shows estimates of exterior noise level increases that would result from project-related traffic increases on local roadways within the immediate vicinity of the project site and Figure 4.5-2 shows the locations of the modeled receptors.

Table 4.5-9
Pre-Project and Post-Project Traffic Noise

Receptor Location	Projected Noise Level (dBA CNEL)		Change In Noise Level (dBA CNEL)	Significance Threshold (dBA)[4]	Significant Impact?
	Existing[1]	Existing Plus Project[3]			
Broadway btwn Chestnut and Magnolia	69.3	69.9	0.6	3	No
Broadway NE Corner of Broadway and Magnolia	71.9	72.4	0.5	3	No
Broadway NW Corner of Chestnut and Broadway	69.2	70.4	1.2	3	No
Cedar - Church btwn Third and Broadway	65.8	70.1	4.3	3	No[5]
Chestnut btwn Third and Broadway	65.3	67.2	1.9	3	No
Chestnut E of Chestnut btwn Third and Broadway	64.1	66.6	2.5	3	No
Magnolia btwn Third and Broadway	70	70.7	0.1	3	No
Ocean btwn Cedar and Chestnut	71.8	71.9	0.1	3	No
Ocean btwn Chestnut and Magnolia	70.3	70.3	0	3	No
Ocean NE Corner of Ocean and Chestnut	71.9	72	0.1	3	No
Ocean NW Corner of Ocean and Cedar	69.2	69.3	0.1	3	No
Ocean NW Corner of Ocean and Pacific	71.8	71.8	0	3	No
Pacific E of Pacific btwn Third and Broadway	68.4	69.0	0.6	3	No
Pacific NE Corner of Pacific and Broadway	71.1	71.5	0.4	3	No
Third btwn Cedar and Chestnut	69.3	70.1	0.8	3	No
Third btwn Magnolia and Chestnut	67.5	68.3	0.8	3	No
Third E of Pacific	68	68.5	0.5	3	No
Third NE Corner of Pacific and Cedar	67.9	69.4	1.5	3	No
Third NE Corner of Third and Magnolia	69.1	69.8	0.7	3	No
Third North of Third West of Pacific	69.5	70.4	0.9	3	No
Third NW Corner of Third and Cedar	70.2	71.2	1	3	No
Third NW Corner of	70.5	71.5	1	3	No

Table 4.5-9
Pre-Project and Post-Project Traffic Noise

Receptor Location	Projected Noise Level (dBA CNEL)		Change In Noise Level (dBA CNEL)	Significance Threshold (dBA)[4]	Significant Impact?
	Existing[1]	Existing Plus Project[3]			
Third and Chestnut					
Third NW Corner of Third and Magnolia	70.9	71.6	0.7	3	No
Third NW Corner of Third and Pacific	70.9	71.6	0.7	3	No
Third SE of Chestnut and Pacific Intersection	67.4	68.3	0.9	3	No
Third SW Corner of Third and Cedar	69.4	70.4	1	3	No
Third SW Corner of Third and Chestnut	68.3	69.4	1.1	3	No

1. Existing noise is based on measured noise, except where measurements were not taken, in which case noise estimates based on U.S. Department of Transportation, Federal Highway Administration's (FHWA) Traffic Noise Model Version 2.5 were used.

2. Existing noise reflects modeled estimates based on traffic from roadways as determined in the Traffic Impact Analysis. Refer to Appendix E for the traffic analysis and Appendix D for the estimates from the FHWA Traffic Noise Model Version 2.5.

3. Existing Plus Project noise reflects estimates generated using FHWA Traffic Noise Model Version 2.5.

4. As shown in Table 4.5-5, an increase of 5 dBA would be considered significant when existing ambient noise is less than 60 dBA and an increase of 3 dBA would be considered significant when existing ambient noise is greater than 60 dBA.

5. The noise level at the First Congregational Church of Long Beach could increase by as much as 4.3 dBA during peak-hour traffic. However, the church would not be occupied during peak-hour traffic on weekday mornings or evenings.

Existing plus project traffic volumes would increase exterior noise levels by less than 3 dBA for all existing residences, which are represented by the locations listed in Table 4.5-9. Additional receptors are located along the roadways included in Table 4.5-9 and throughout the buildings, which extend further back from the roadways, and would also not experience exterior noise level increases greater than 3 dBA. Therefore, impacts from project-related traffic noise increases would be less than significant.

Future noise levels were also calculated using the FHWA Traffic Noise Model. In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed project, the status of other known development projects (cumulative projects) in the area was researched, as described in Section 4.6, *Transportation and Traffic*. Eleven cumulative projects within a two-mile radius of the project site are located in the City of Long Beach. These cumulative projects have either been built, but are not yet fully occupied, or are being processed for approval and have been included as part of the cumulative background setting. Noise levels were estimated for a scenario including only these cumulative projects and a scenario including the cumulative projects and the proposed Civic Center Project. The change in noise level that would occur as a result of the proposed project is again compared to the 3 dBA threshold described in Table 4.5-5. Exterior noise levels are shown in Table 4.5-10.

Table 4.5-10
Cumulative Traffic Noise Impacts

Roadway	Projected Noise Level (dBA CNEL)			Change In Noise Level (Future Plus Project - Existing) (dBA CNEL)	Project Contribution to Change in Noise Level (Future Plus Project - Future) (dBA CNEL)	Significance Threshold (dBA)[4]	Significant?
	Existing[1]	Future	Future Plus Project[3]				
Broadway btwn Chestnut and Magnolia	69.3	69.9	71	1.7	1.1	3	No
Broadway NE Corner of Broadway and Magnolia	71.9	72.4	73.4	1.5	1	3	No
Broadway NW Corner of Chestnut and Broadway	69.2	69.5	70.8	1.6	1.3	3	No
Cedar - Church btwn Third and Broadway	65.8	66.1	70.1	4.3	4	3	No[5]
Chestnut btwn Third and Broadway	65.3	65.5	66.7	1.4	1.2	3	No
Chestnut E of Chestnut btwn Third and Broadway	64.1	64.3	65.9	1.8	1.6	3	No
Magnolia btwn Third and Broadway	70	70.4	70.9	0.9	0.5	3	No
Ocean btwn Cedar and Chestnut	71.8	72.2	72.2	0.4	0	3	No
Ocean btwn Chestnut and Magnolia	70.3	70.9	70.8	0.5	-0.1	3	No
Ocean NE Corner of Ocean and Chestnut	71.9	72.3	72.3	0.4	0	3	No

Table 4.5-10
Cumulative Traffic Noise Impacts

Roadway	Projected Noise Level (dBA CNEL)			Change In Noise Level (Future	Project Contribution to	Significance Threshold	Significant?
Ocean NW Corner of Ocean and Cedar	69.2	69.6	69.6	0.4	0	3	No
Ocean NW Corner of Ocean and Pacific	71.8	71.6	72.5	0.7	0.9	3	No
Pacific E of Pacific btwn Third and Broadway	68.4	69.0	69.3	0.9	0.3	3	No
Pacific NE Corner of Pacific and Broadway	71.1	71.6	71.9	0.8	0.3	3	No
Third btwn Cedar and Chestnut	69.3	69.6	70.5	1.2	0.9	3	No
Third btwn Magnolia and Chestnut	67.5	67.7	68.6	1.1	0.9	3	No
Third E of Pacific	68.0	68.3	68.8	0.8	0.5	3	No
Third NE Corner of Pacific and Cedar	67.9	68.3	69.7	1.8	1.4	3	No
Third NE Corner of Third and Magnolia	69.1	69.5	70.1	1	0.6	3	No
Third North of Third West of Pacific	69.5	70.0	70.8	1.3	0.8	3	No
Third NW Corner of Third and Cedar	70.2	70.5	71.6	1.4	1.1	3	No
Third NW Corner of Third and Chestnut	70.5	70.8	71.7	1.2	0.9	3	No

Table 4.5-10
Cumulative Traffic Noise Impacts

Roadway	Projected Noise Level (dBA CNEL)			Change In Noise Level (Future	Project Contribution to	Significance Threshold	Significant?
Third NW Corner of Third and Magnolia	70.9	71.2	71.9	1	0.7	3	No
Third NW Corner of Third and Pacific	70.9	71.4	72.0	1.1	0.6	3	No
Third SE of Chestnut and Pacific Intersection	67.4	67.6	68.5	1.1	0.9	3	No
Third SW Corner of Third and Cedar	69.4	69.7	70.7	1.3	1.0	3	No
Third SW Corner of Third and Chestnut	68.3	68.5	69.4	1.1	0.9	3	No

1. Existing noise is based on noise estimates from Federal Highway Administration's (FHWA) Traffic Noise Model Version 2.5.

2. Existing noise reflects modeled estimates based on traffic from roadways as determined in the Traffic Impact Analysis. Refer to Appendix E for the traffic analysis and Appendix D for the estimates from the FHWA Traffic Noise Model Version 2.5.

3. Existing Plus Project noise reflects estimates generated using FHWA Traffic Noise Model Version 2.5.

4. As shown in Table 4.5-5, an increase of 5 dBA would be considered significant when existing ambient noise is less than 60 dBA and an increase of 3 dBA would be considered significant when existing ambient noise is greater than 60 dBA.

5. The noise level at the First Congregational Church of Long Beach could increase by as much as 4.3 dBA during peak-hour traffic. However, the church would not be occupied during peak-hour traffic on weekday mornings or evenings.

Similar to the existing and existing plus project conditions, the project's contribution to the future plus project change in noise levels would only exceed the 3 dBA increase at the First Congregational Church of Long Beach. However, as described above, this increase in noise was determined based on peak hour traffic, which occurs on weekday mornings and evenings. Services are held at the First Congregational Church of Long Beach on weekends; therefore the church would not be occupied during peak-hour traffic. Impacts from project-related traffic noise increases under future conditions would be less than significant.

Mitigation Measures. Because impacts would be less than significant, no mitigation is required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

CEQA Checklist Threshold	*Exposure of persons to or generation of noise levels in exceed of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.*
Quantitative threshold	*See Table 4.5-5 above.*

Impact N-6 **Noise levels at proposed sensitive receptors may exceed City thresholds for interior and exterior noise. The Downtown Plan EIR determined that the Downtown Plan would result in a Class II impact, potentially significant unless mitigation is incorporated, as it would allow sensitive receptors to be located in areas exceeding the City's noise standards. The Downtown Plan required site-specific noise analysis and mitigation for individual projects. The proposed project would contribute to this impact and such mitigation would be required. This is a Class II, *significant but mitigable* impact.**

The Downtown Plan EIR determined that because the Downtown Plan would allow the location of sensitive receptors in areas that would exceed the standards identified for the applicable land use by the Noise Element of the Long Beach General Plan, impacts would be significant but mitigable. The project would be subject to the mitigation measure identified in the EIR, specifically Mitigation Measure Noise-5, which requires a site-specific noise study and mitigation in areas where new residential development would be exposed to noise levels exceeding 65 dBA. This noise study requirement has been met in this EIR and is described below.

The *Transportation Impact Analysis* prepared for the proposed project (Shane Green, personal communication, June 2015; see Appendix E) determined the traffic levels expected as a result of the proposed project. Traffic is the largest source of noise in the project area; therefore, these traffic levels were used to determine potential sound levels at proposed receptors, including proposed residences and the proposed library location (Figure 4.5-2 shows the locations of the modeled receptors). The sensitive receptors that would be closest to the roadways were selected to determine the highest noise levels that would occur at receptors located along these roadways. Receptors that were not modeled would experience similar or lower increases in noise level than those receptors that were modeled based on their proximity to the roadways.

Table 4.5-11 shows exterior and interior noise levels that would be experienced at the proposed residences and library. As shown, exterior noise levels would exceed 65 dBA at all proposed receptors adjacent to roadways. As described in Section 4.5.3(a), typical residential construction in California provides approximately 15 dBA of noise reduction from exterior noise sources with windows partially open, and approximately 20 to 25 dBA of noise reduction with windows kept closed (DOT, 2009).

Table 4.5-11
Projected Noise Levels
for Proposed Receptors

Roadway	Projected Noise Level
Future Library NW corner Broadway and Pacific	71.6
Future Library on Broadway btwn Pacific and Cedar	72.4
Future Library on Pacific btwn Broadway and First	68.6
NE corner Broadway and Chestnut	69.4
E of Cedar btwn Broadway and Third	69.9
NE corner Broadway and Cedar	70.5
North of Broadway btwn Pacific and Cedar	68.3
NW corner Pacific and Broadway	72.0
SE Corner Third and Cedar	70.1
SW Corner Third and Pacific	70.4
W of Pacific btwn Third and Broadway	68.7

Where exterior noise levels are below 70 dBA Ldn, interior noise can be mitigated with standard wall and window construction, and the inclusion of mechanical forced-air ventilation to allow occupants the option of maintaining windows closed to control noise, as required by Mitigation Measure Noise-6(a). Where exterior noise levels exceed 70 dBA Ldn, noise-sensitive uses would not normally be able to meet the 45-dBA Ldn interior standard simply through typical construction methods. Thus, noise-sensitive uses, including the proposed library and the residences located adjacent to Broadway, Pacific Avenue, Third Street, and Cedar Avenue, would require additional noise reduction measures described in Mitigation Measure Noise-6(b).

Mitigation Measures. The following mitigation measures would be required to reduce impacts to future receptors to a less than significant level. These mitigation measures include features that were recommended in Mitigation Measure Noise-5 of the Downtown Plan EIR.

Noise-6(a) **Mechanical Ventilation.** The applicant shall provide mechanical ventilation in all residential units proposed along Broadway, Pacific Avenue, Third Street, Cedar Avenue, Chestnut Avenue, and First Street, so that windows can remain closed at the choice

of the occupants to maintain interior noise levels below 45 dBA Ldn.

Noise-6(b) **Sound-Rated Windows and Sliding Glass Doors.** The applicant shall install sound-rated windows and sliding glass doors on the residential units that face Broadway, Pacific Avenue, Third Street, and Cedar Avenue, as well as the proposed library, such that interior noise levels would not exceed 45 dBA Ldn when the windows are closed.

Significance After Mitigation. With implementation of mitigation measures Noise-6(a) and Noise-6(b), impacts to interior noise levels for proposed residences and the proposed library would be reduced to less than significant levels.

c. Cumulative Impacts. The Downtown Plan Area, which surrounds the project site, is the geographic extent for cumulative impacts associated with noise. Cumulative development in the City of Long Beach would result in the development of eleven projects also served by the larger roadway network surrounding the project site, as described in Section 4.6, *Traffic and Transportation*. As shown in Table 4.5-10, cumulative impacts along the analyzed surrounding roadway network would contribute to further exceedance of the exterior noise standard over time. Cumulative traffic noise increases from project-generated traffic along the analyzed road segments would range from 0.0 to 4.2 dBA and in some cases the project would result in a decrease in traffic noise compared to future without project traffic, due to the extension of existing roadways.

The operational noise generation of cumulative projects is not known, but because future uses would be similar to the existing uses in the area, cumulative projects would not create cumulative operational noise impacts in combination with the proposed project. All future development would be required to comply with the City's noise and vibration standards, which restrict the level of noise and vibration that can be generated near a property according to its designated use. Cumulative impacts would be less than significant.

4.6 TRANSPORTATION AND TRAFFIC

This section analyzes the potential for the proposed project to cause significant impacts to the existing traffic and transportation facilities in the City of Long Beach. The analysis in this section is based on a Traffic Impact Analysis (TIA) prepared for the project by Linscott, Law & Greenspan, Engineers (LLG), in July 2015. The full TIA is provided in Appendix E.

4.6.1 Setting

a. Existing Street System. The principal local network of streets serving the project site includes Third Street, Broadway, Ocean Boulevard, First Street, Magnolia Avenue, Chestnut Avenue, Cedar Avenue, and Pacific Avenue. The following discussion provides a brief synopsis of these streets. The descriptions are based on an inventory of existing roadway conditions.

Third Street. Third Street is a two-lane, one-way roadway (westbound travel only) oriented in the east-west direction. Parking is generally permitted on both sides of the roadway, except for a segment between Chestnut Avenue and Cedar Avenue. A separated/protected bike lane is also present on Third Street and limits parking on the street. The posted speed limit is 25 miles per hour (mph). A bike The intersection of Third Street and Pacific Avenue is controlled by a traffic signal.

Broadway. Broadway is a two-lane, one-way divided roadway (eastbound travel only) oriented in the east-west direction. West of Magnolia Avenue, parking is restricted on both the north and south side of the roadway. West of Pine Avenue, parking is generally permitted on the north side of the roadway and restricted on the south side. East of Pine Avenue, parking is permitted on both sides of the roadway. A separated/protected bike lane is also present on Broadway and limits parking on the street. The posted speed limit on Broadway is 30 mph. The intersections of Broadway at Magnolia Avenue, Chestnut Avenue, Cedar Avenue, and Pacific Avenue are controlled by traffic signals.

Ocean Boulevard. Ocean Boulevard is primarily a six-lane, divided roadway oriented in the east-west direction. West of Magnolia Avenue, Ocean Boulevard is a seven-lane, divided roadway, with three travel lanes in the eastbound direction and four travel lanes in the westbound direction. Parking is permitted on both sides of the roadway. The posted speed limit on Ocean Boulevard is 30 mph. The intersections of Ocean Boulevard at Magnolia Avenue, Chestnut Avenue, and Pacific Avenue are controlled by traffic signals. The intersection of Ocean Boulevard at Cedar Avenue is controlled by a one-way stop.

First Street. First Street is primarily a two-lane, divided roadway oriented in the east-west direction. Parking is not permitted on both sides of the roadway. The posted speed limit on First Street is 25 mph. The intersection of Pacific Avenue at First Street is controlled by a traffic signal.

Magnolia Avenue. Magnolia Avenue is primarily a four-lane, divided roadway oriented in the north-south direction. South of Ocean Boulevard, Magnolia Avenue is a six-lane, divided roadway. North of Third Street, Magnolia Avenue is a two-lane, divided roadway. Parking is permitted on both sides of the roadway north of Broadway. South of Broadway, parking is

generally not permitted on both sides of the roadway, except for a segment between Broadway and Ocean Avenue where parking is permitted on the west side of the roadway. North of Ocean Boulevard, the posted speed limit is 25 mph; south of Ocean Boulevard, the posted speed limit is 45 mph. The intersections of Magnolia Avenue at Broadway and Ocean Boulevard are controlled by traffic signals.

Chestnut Avenue. Chestnut Avenue is primarily a two-lane, undivided roadway oriented in the north-south direction. Between Third Street and Broadway, Chestnut is a two-lane, divided roadway. Between Broadway and Ocean Boulevard, Chestnut is a three-lane, undivided roadway. Parking is permitted on both sides of the roadway, north of Ocean Boulevard. Parking is not permitted on both sides of the roadway south of Ocean Boulevard. The posted speed limit on Chestnut Avenue is 25 mph. The intersections of Chestnut Avenue at Broadway and Ocean Boulevard are controlled by traffic signals.

Cedar Avenue. Cedar Avenue is a primarily two-lane, undivided roadway oriented in the north-south direction. South of Broadway and north of Ocean Boulevard, Cedar Avenue is a two-lane, divided roadway. Parking is permitted on both sides of the roadway, north of Broadway. Parking is not permitted on both sides of the roadway, south of Broadway. The posted speed limit on Cedar Avenue is 25 mph. The intersection of Cedar Avenue at Broadway is controlled by a traffic signal. The intersection of Cedar Avenue at Ocean Boulevard is controlled by a one-way stop.

Pacific Avenue. Pacific Avenue is primarily a four-lane, divided roadway oriented in the north-south direction. South of Ocean Boulevard, Pacific Avenue is a two-lane, undivided roadway. Parking is not permitted on either side of the roadway within the vicinity of the project site. The posted speed limit on Pacific Avenue is 25 mph. The intersections of Pacific Avenue at Third Street, Broadway, First Street and Ocean Boulevard are controlled by traffic signals.

b. Existing Public Transit. The Los Angeles County Metropolitan Transportation Authority and Long Beach Transit (LBT) provide public transit services in the vicinity of the proposed project. In the vicinity of the project, the Metro Blue Line currently serves Pacific Avenue. The Los Angeles Department of Transportation (LADOT) Commuter Express 142 currently serves Ocean Boulevard. In addition to the Metro routes, LBT Route 151 serves Broadway, Third Street, and Pacific Avenue; Route 121 serves Ocean Boulevard and Pacific Avenue; LBT Route 181, 191 and 192 serve Broadway, Third Street, and Magnolia Avenue; LBT Route 21, 22, 61, and Passport serve Pacific Avenue. LBT bus stops are located throughout Downtown and include the downtown Long Beach Transit Mall on First Street between Pacific Avenue and Long Beach Boulevard, in proximity to the project site. From the westerly edge of the project site, the Long Beach Transit Mall is located directly east of the civic center block across Pacific Avenue. The TIA in Appendix E contains figures that illustrate Long Beach Transit routes and bus stops within the vicinity of the project site.

c. Existing Bicycle Master Plan and Bicycle Facilities. The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. Existing and proposed City of Long Beach Bicycle Facilities in the vicinity of the project site are shown in the TIA in Appendix E.

d. Existing Intersection Conditions. Existing a.m. and p.m. peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) methodology for signalized intersections.

Intersection Capacity Utilization (ICU) Method of Analysis. In conformance with City of Long Beach and Los Angeles County Congestion Management Program (CMP) requirements, existing weekday peak hour operating conditions for the key signalized study intersections were evaluated using the ICU method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. The ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per Los Angeles County CMP requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. A clearance interval is also added to each Level of Service (LOS) calculation. Per City of Long Beach requirements, clearance intervals are based on the number of phases in the intersection and whether the left turning movements are all fully protected or whether some of them are permitted with other left-turn movements being protected. Table 4.6-1 shows the clearance intervals used in the analysis of the key study intersections within the City of Long Beach.

Table 4.6-1
City of Long Beach Clearance Intervals

Number of Signal Phases	Left-turn Phasing Type	Clearance Interval (Percent)
2	Permitted	10%
3	Protected and Permitted	12%
3	Fully Protected	15%
4	Protected and Permitted	14%
4	Fully Protected	18%

Source: Linscott, Law and Greenspan, July 2015; see Appendix E for full TIA report.

The ICU value translates to a LOS estimate, which is a relative measure of the intersection performance. The six qualitative categories of LOS have been defined along with the corresponding ICU value range and are shown in Table 4.6-2. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

Table 4.6-2
Level of Service Criteria for Signalized Intersections

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	LOS Description
A	<0.600	**Excellent**. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601–0.700	**Very Good**. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701–0.800	**Good**. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801–0.900	**Fair**. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901–1.000	**Poor**. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>1.000	**Failure**. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

Source: Linscott, Law and Greenspan, July 2015; see Appendix E for full TIA report.

Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections). The 2000 HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the key unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay is measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a LOS estimate, which is a relative measure of the intersection performance. The six qualitative categories of LOS have been defined along with the corresponding HCM control delay value range, as shown in Table 4.6-3.

Table 4.6-3
Level of Service Criteria for Unsignalized Intersections

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

Source: Linscott, Law and Greenspan, July 2015; see Appendix E for full TIA report.

Level of Service Criteria. According to the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E or F).

Existing Traffic Volumes. The ten key study intersections selected for evaluation in the TIA provide local access to the project study area. They include the following:

1. *Magnolia Avenue at Broadway*
2. *Chestnut Avenue at Broadway*
3. *Cedar Avenue at Broadway*
4. *Pacific Avenue at Broadway*
5. *Magnolia Avenue at Ocean Boulevard*
6. *Chestnut Avenue at Ocean Boulevard*
7. *Cedar Avenue at Ocean Boulevard*
8. *Pacific Avenue at Ocean Boulevard*
9. *Pacific Avenue at Third Street*
10. *Pacific Avenue at First Street*

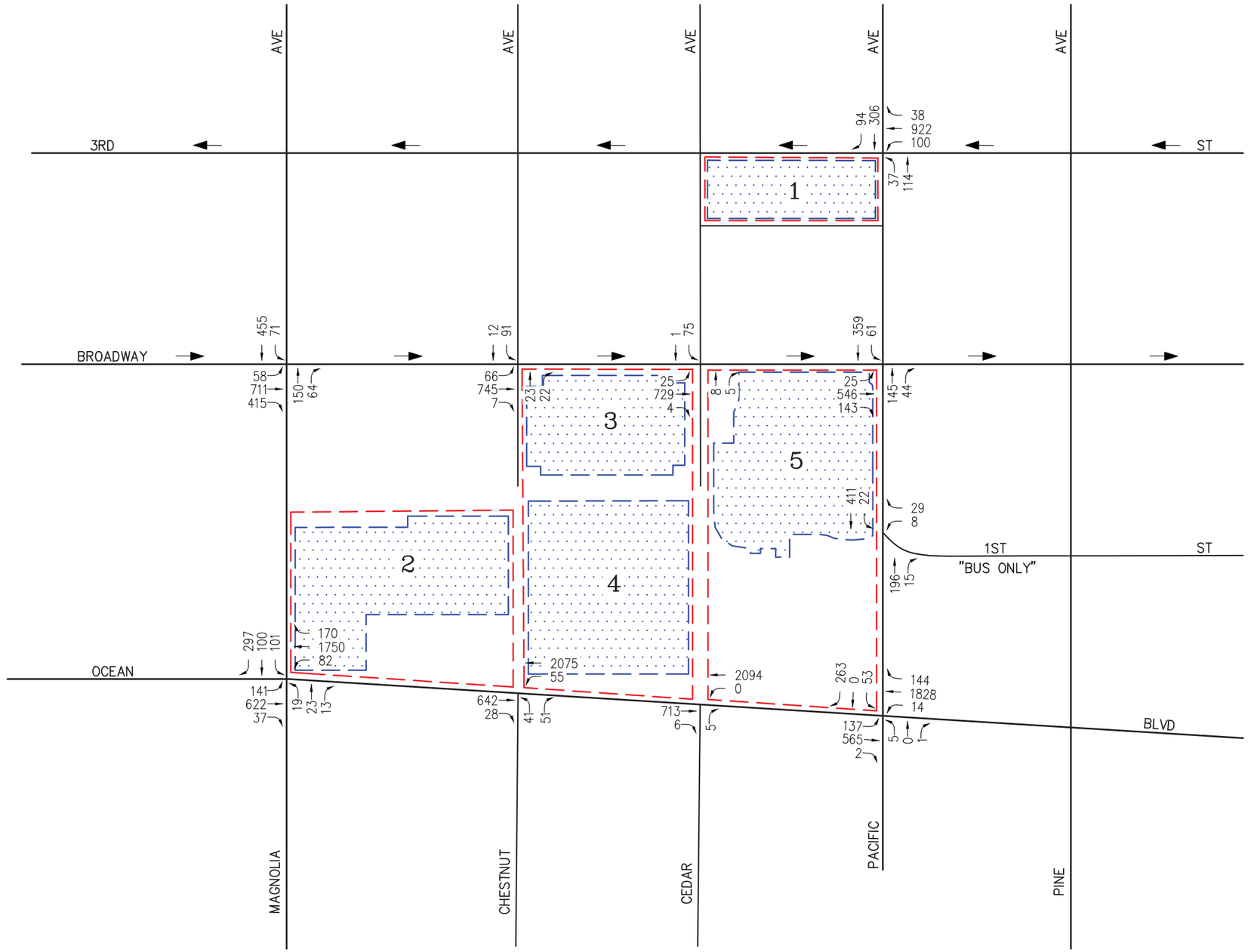
These ten key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections, and their analysis will reveal the expected impact associated with the proposed project.

Existing weekday peak hour traffic volumes for the ten key study intersections evaluated in the TIA were obtained from manual turning movement counts conducted by National Data and Surveying Services (NDS) in March 2015.

Figures 4.6-1a and 4.6-1b illustrate the existing weekday a.m. and p.m. peak hour traffic volumes at the ten key study intersections evaluated in the TIA, respectively. Figures 4.6-2a and 4.6-2b show a.m. and p.m. peak hour traffic volumes associated with the current Civic Center land uses.

Existing Level of Service Results. Table 4.6-4 summarizes the existing peak hour service level calculations for the ten (10) key study intersections based on existing traffic volumes and current street geometrics. Review of Table 4.6-4 indicates that all ten (10) key study intersections currently operate at LOS C or better during the weekday a.m. and p.m. peak hours.

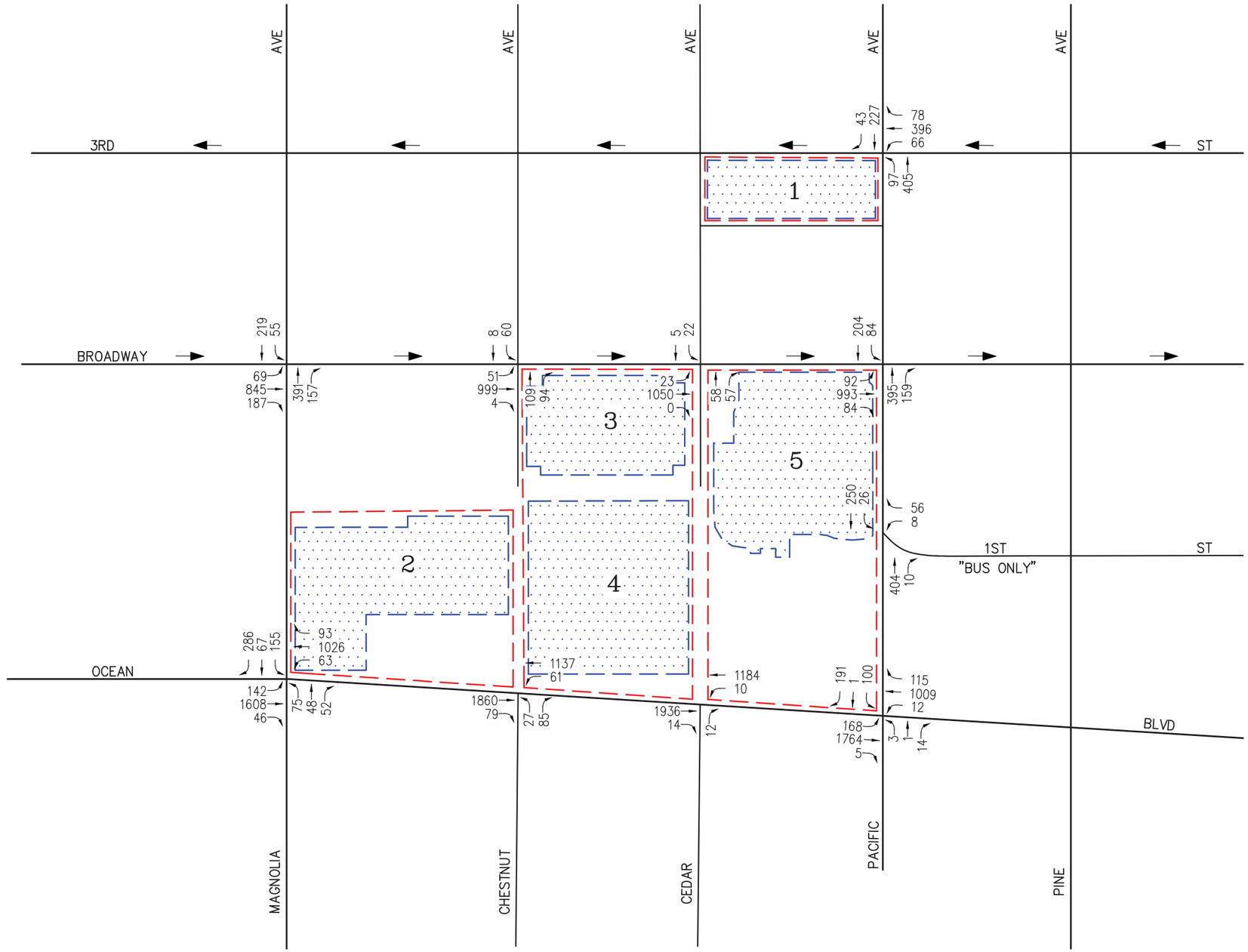
This page intentionally left blank.



Existing A.M. Peak Hour Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

Figure 4.6-1a



KEY

= PROJECT AREA
= PARKING LOCATIONS

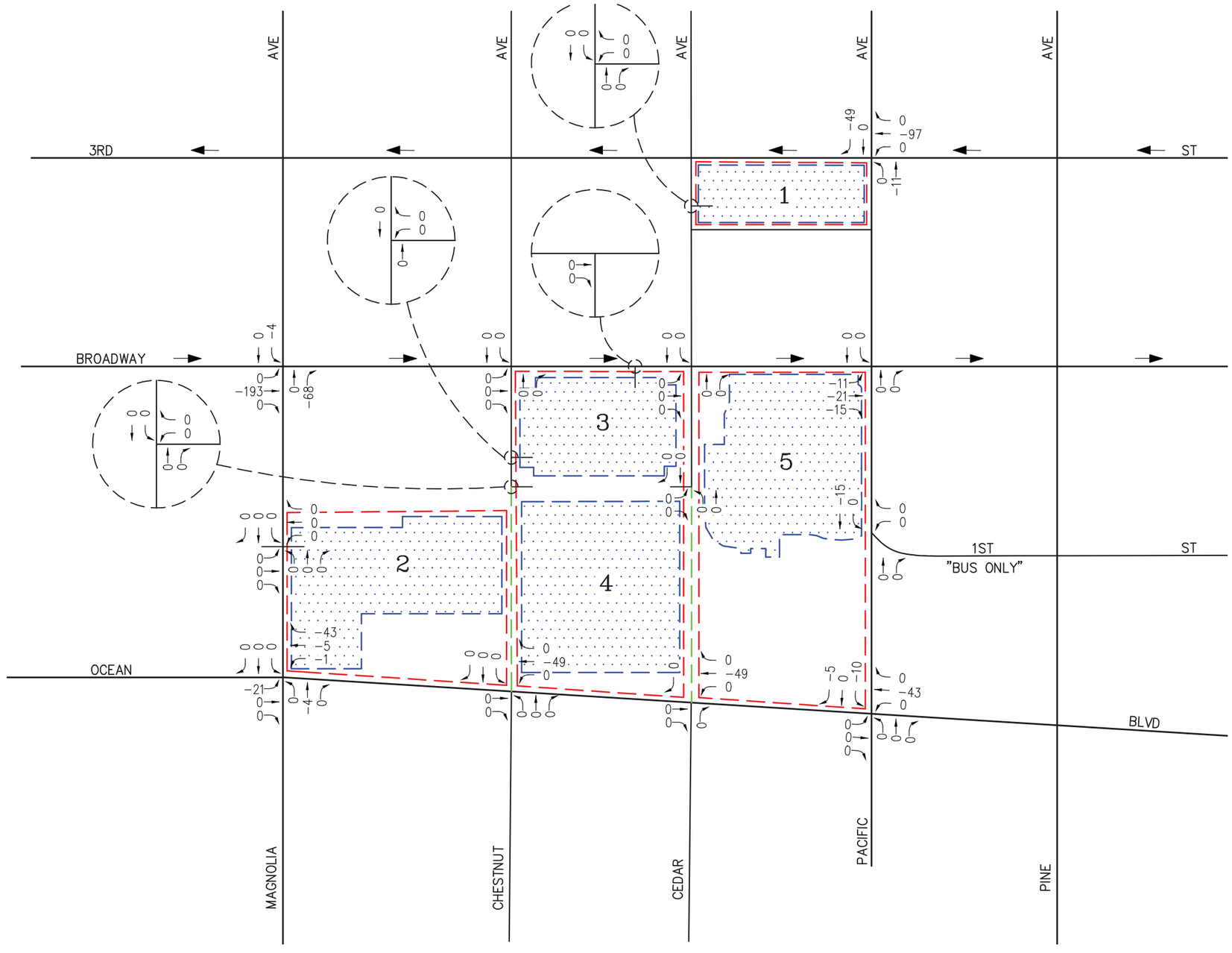
1 = THIRD & PACIFIC BLOCK RESIDENTIAL PARKING
2 = CIVIC CENTER BLOCK PARKING
3 = CENTER BLOCK BROADWAY PARKING GARAGE
4 = CENTER BLOCK COMMERCIAL PARKING GARAGE
5 = LINCOLN PARK BLOCK PARKING GARAGE

N

Existing P.M. Peak Hour Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

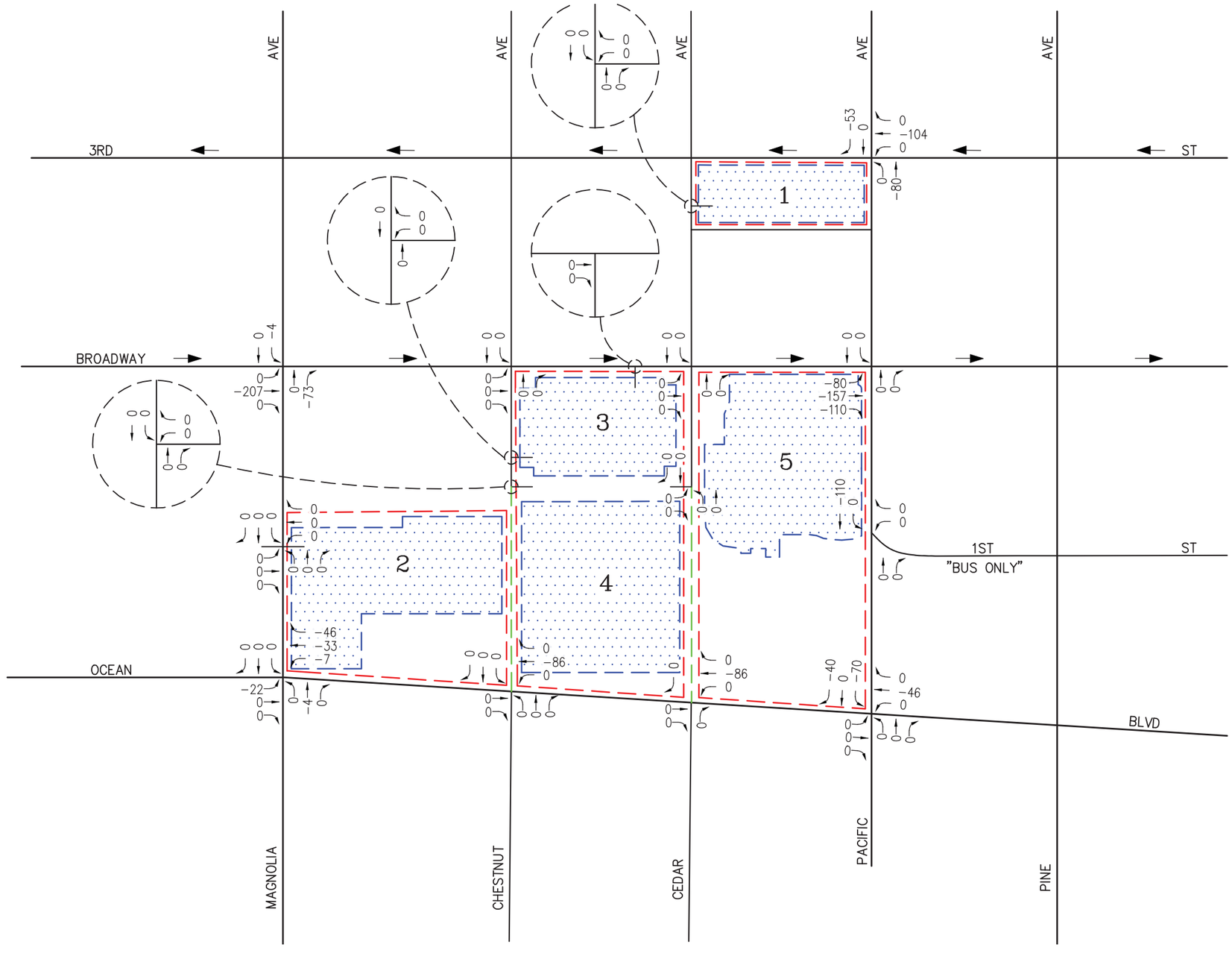
Figure 4.6-1b



A.M. Peak Hour Existing
Civic Center Traffic Volumes

Figure 4.6-2a

Source: Linscott, Law & Greenspan, 2015



P.M. Peak Hour Existing
Civic Center Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

Figure 4.6-2b

Table 4.6-4
Existing Peak Hour Levels of Service

Key Intersection	Control Type	Time Period	ICU/HCM	LOS
1. Magnolia Avenue at Broadway	2-Phase Traffic Signal	a.m. p.m.	0.502 0.570	A A
2. Chestnut Avenue at Broadway	3-Phase Traffic Signal	a.m. p.m.	0.432 0.553	A A
3. Cedar Avenue at Broadway	3-Phase Traffic Signal	a.m. p.m.	0.432 0.531	A A
4. Pacific Avenue at Broadway	3-Phase Traffic Signal	a.m. p.m.	0.478 0.663	A B
5. Magnolia Avenue at Ocean Boulevard	3-Phase Traffic Signal	a.m. p.m.	0.770 0.730	C C
6. Chestnut Avenue at Ocean Boulevard	2-Phase Traffic Signal	a.m. p.m.	0.564 0.595	A A
7. Cedar Avenue at Ocean Boulevard	One-Way Stop	a.m. p.m.	9.7 s/v 17.2 s/v	A C
8. Pacific Avenue at Ocean Boulevard	6-Phase Traffic Signal	a.m. p.m.	0.689 0.559	B A
9. Pacific Avenue at Third Street	3-Phase Traffic Signal	a.m. p.m.	0.569 0.430	A A
10. Pacific Avenue at First Street	3-Phase Traffic Signal	a.m. p.m.	0.302 0.336	A A

Source: Linscott, Law and Greenspan, July 2015; see Appendix E for full TIA report.
Notes:
ICU = Intersection Capacity Utilization
s/v = seconds per vehicle (delay)
LOS = Level of Service, please refer to Table 4.6-2 and Table 4.6-3 for the LOS definitions

e. Regulatory Setting.

Congestion Management Program (CMP). In Los Angeles County, the CMP uses ICU intersection analysis methodology to analyze its operations. 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. Metro is the Congestion Management Agency (CMA) for the County. Metro has been charged with the development, monitoring, and biennial updating of Los Angeles County's CMP. The Los Angeles County CMP is intended to address the impact of local growth on the regional transportation system. The CMP Highway System includes specific roadways, including State highways, and CMP arterial monitoring locations/intersections. The CMP is also the vehicle for proposing transportation projects that are eligible to compete for the State gas tax funds.

City of Long Beach General Plan. It is the stated goal of the City to maintain or improve the current ability to move people and goods to and from activity centers while reinforcing the quality of life in their neighborhoods. This goal is supported by the objectives to: (1) maintain traffic and transportation LOS at LOS D, (2) accommodate reasonable, balanced growth, and (3) maintain or enhance our quality of life. The following specific Mobility of People (MOP) policies are included in the Mobility Element of the General Plan.

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 1-9	*Increase mode shift of transit, pedestrians, and bicycles.*
MOP Policy 1-18	*Focus development densities for residential and nonresidential uses around the eight Metro Blue Line stations within City boundaries.*
MOP Policy 4-1	*Consider effects on overall mobility and various travel modes when evaluating transportation impacts of new developments or infrastructure projects.*
MOP Policy 15-3	*Consider pickup and delivery activities associated with various land uses when approving new development, implementing projects, and improving highways, streets, and bridges.*

Long Beach Municipal Code. Chapter 21.41, Off-Street Parking and Loading requirements of the Long Beach Municipal Code (LBMC) provides parking requirements for development projects within the City. Since the proposed project involves development of new residential uses within the City, which will require adequate parking, the proposed project is subject to the requirements of Chapter 21.41 of the LBMC.

4.6.2 Previous Environmental Review

The Long Beach Downtown Plan EIR (the "Downtown Plan EIR") examined traffic impacts associated with buildout of the Downtown Plan. The Downtown Plan EIR determined that the Downtown Plan would result in significant impacts at 16 intersections and would result in a significant and unavoidable impact. The Downtown Plan EIR determined that the Downtown Plan would not result in any significant impacts related to design hazards or emergency access. For comparison purposes, the project's trip generation potential was compared to the traffic forecast associated with the development potential of the Civic Center area as evaluated in the Downtown Plan EIR Traffic Impact Analysis, dated February 4, 2010. Up to 800 residential units, 460,000 square feet (sf) of office/commercial floor area, 64,000 sf of retail space and 16,000 sf of restaurant uses were assumed and assessed for the Civic Center area in the Downtown Plan EIR traffic analysis.

The project includes the demolition of the former Long Beach Courthouse. The Long Beach Courthouse Demolition Project was studied in a Draft EIR (SCH# 2014051003) that was circulated in October and November of 2014, but was not certified. The Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to conflicts with applicable plans would be less than significant with implementation of mitigation involving the development of a Construction Management Plan.

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds.

Traffic Forecasting Methodology. In order to estimate the traffic impact characteristics of the proposed project, a multi-step process has been utilized. The first step is estimating traffic generation, which includes the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing or expected future travel patterns in the study area. The analysis assumes the future year scenario does not include roadway changes or improvements beyond those proposed by the project.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

Project Traffic Generation. Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the Ninth Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE).

Trip generation rates/equations for ITE Land Use 230: Residential Condominium/Townhouse, ITE Land Use 310: Hotel, ITE Land Use 411: City Park, ITE Land Use 590: Library, ITE Land Use 710: General Office Building, ITE Land Use 820: Shopping Center and ITE Land Use 932: High-Turnover (Sit Down) Restaurant have been applied appropriately to the existing development and proposed project uses.

As shown in Table 4.6-5, the proposed project is forecast to generate 18,582 daily trips, including 1,185 trips (795 inbound, 390 outbound) produced in the a.m. peak hour and 1,668 trips (693 inbound, 975 outbound) produced in the p.m. peak hour on a typical weekday.

For the existing land use, Table 4.6-5 shows that the existing trip generation potential of the current civic center (i.e., City Hall office tower, Main Library and Lincoln Park) totals 7,659 daily trips, with 514 trips (418 inbound, 96 outbound) produced in the a.m. peak hour and 1,116 trips (446 inbound, 670 outbound) produced in the p.m. peak hour.

Comparison of the trips generated by the proposed project to the trip generation potential of existing land uses shows that the implementation of the proposed project would result in an additional 10,923 daily trips, including 671 net a.m. peak hour trips and 552 net p.m. peak hour trips.

Table 4.6-5
Project Trip Generation Forecast

Land Use	Daily	A.M. Peak Hour			P.M. Peak Hour		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Proposed Project Trip Generation							
Third and Pacific Block							
Residential	1,176	11	56	67	53	25	78
Civic Block							
City Hall and Port Building	5,347	527	72	599	92	447	539
Lincoln Park and New Library Block							
Main Library and Lincoln Park	3,644	90	40	130	277	298	575
Center Block							
Residential	2,821	25	123	148	119	59	178
Hotel	1,552	60	41	101	58	56	114
Retail	3,076	46	28	74	63	69	132
Restaurant	966	36	30	66	31	21	52
Total Proposed Project Trips	**18,582**	**795**	**390**	**1,185**	**693**	**975**	**1,668**
Total Existing Land Use Trips	**7,659**	**418**	**96**	**514**	**446**	**670**	**1,116**
Net Project Trips (Project – Existing)	**10,923**	**377**	**294**	**671**	**247**	**305**	**552**

Source: Linscott, Law and Greenspan July 2015; see Appendix E for full TIA report. Trip calculations include reductions for transit, internal capture, mixed-use, and pass by trips, where applicable.

Project Traffic Distribution and Assignment. Figures 4.6-3a illustrates the general, directional traffic distribution pattern for the existing civic center uses, whereas Figures 4.6-3b through 4.6-3f present the trip distribution patterns for various components of the proposed project. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- *Location of site access points in relation to the surrounding street system*
- *The site's proximity to major traffic carriers and regional access routes*
- *Physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns*

- *Presence of traffic congestion in the surrounding vicinity*
- *Ingress/egress availability at the project's parking structures, including turn restrictions to and from Ocean Boulevard*

The a.m. and p.m. peak hour traffic volumes associated with the current civic center uses are presented in Figures 4.6-2a and 4.6-2b, respectively. The anticipated a.m. and p.m. peak hour project traffic volumes associated with the proposed project are presented in Figures 4.6-4a and 4.6-4b, respectively. The traffic volume assignments presented in Figures 4.6-2a and 4.6-2b above reflect the traffic distribution characteristics for the existing development and the traffic generation potential presented in Table 4.6-5.

The project's traffic volume forecasts illustrated in Figures 4.6-4a and 4.6-4b reflect the traffic distribution characteristics of the proposed project as shown in Figures 4.6-3b through 4.6-3f below and the project traffic generation potential presented in Table 4.6-5.

Figures 4.6-5a and 4.6-5b present projected a.m. and p.m. peak hour traffic volumes at the ten key study intersections with the addition of the trips generated by the proposed project to existing traffic volumes, respectively.

Future Traffic Conditions.

Ambient Traffic Growth. Cumulative traffic growth estimates were calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent per year. Applying this factor to existing Year 2015 traffic volumes results in a five percent increase of growth in existing volumes in horizon year 2020.

The ambient growth factor is generally consistent with the background traffic growth estimates contained in the most current Congestion Management Program for Los Angeles County. In addition, the one percent per year ambient growth factor was approved by City of Long Beach staff.

Cumulative Projects Traffic Characteristics. In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed project, the status of other known development projects (cumulative projects) in the area has been researched. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. There are twelve cumulative projects within a two-mile radius of the project site that are located in the City of Long Beach. These cumulative projects have either been built, but not yet fully occupied, or are being processed for approval and have been included as part of the cumulative background setting. These cumulative projects are described in Section 3, *Environmental Setting*.

Table 4.6-6 presents the development totals and resultant trip generation for the twelve cumulative projects. As shown in Table 4.6-6, the twelve cumulative projects are expected to generate a combined total of 13,513 daily trips, including 891 a.m. peak hour trips (251 inbound and 640 outbound) and 1,306 p.m. peak hour trips (761 inbound and 545 outbound) on a typical weekday.

Table 4.6-6
Cumulative Projects Traffic Generation Forecast[1]

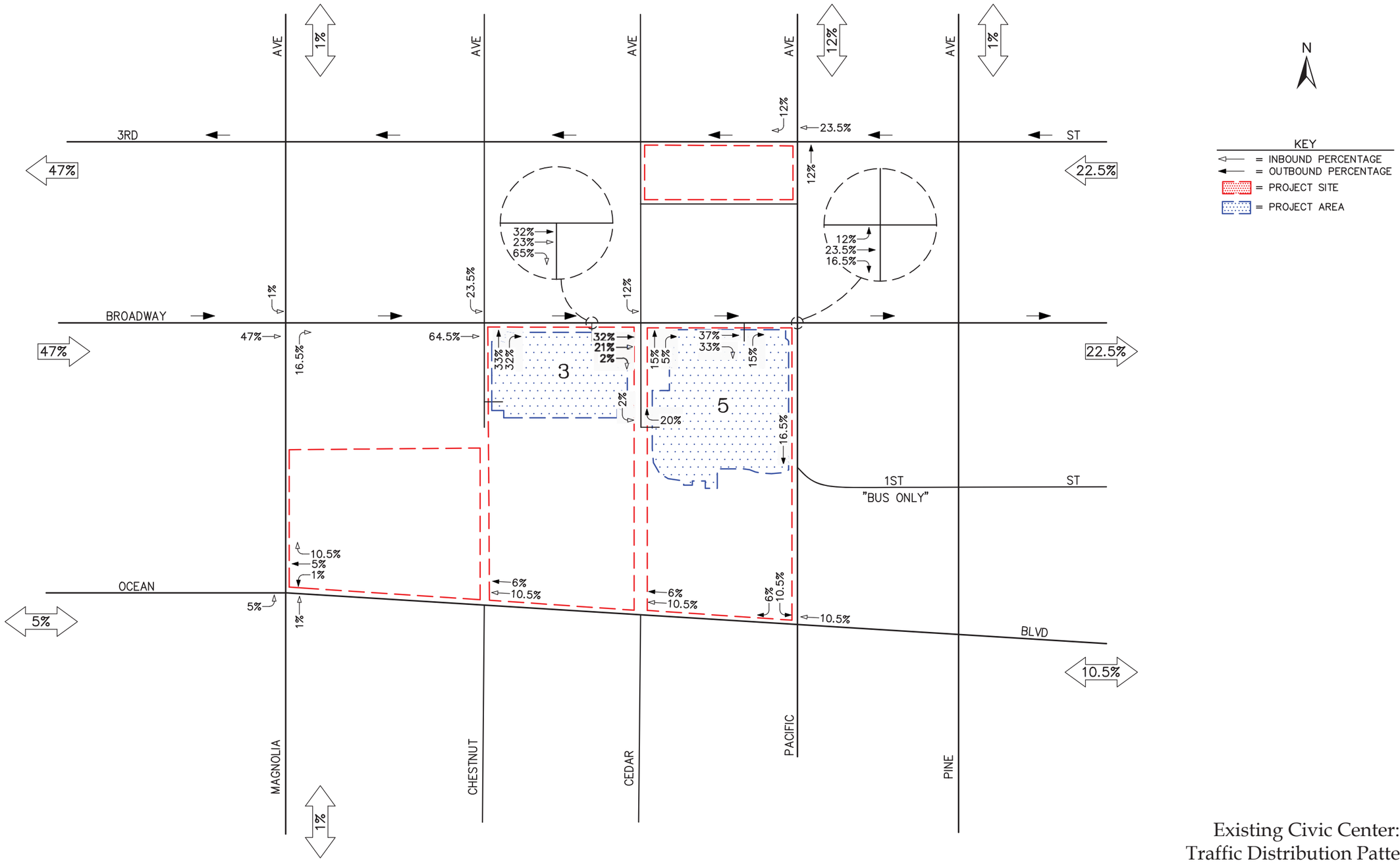
#	Cumulative Project Description	Daily 2-way	A.M. Peak Hour			P.M. Peak Hour		
			In	Out	Total	In	Out	Total
1	207 East Seaside Way Apartments[2]	751	11	47	58	45	25	70
2	Silversands	652	16	30	46	31	22	53
3	Mixed-Use Project	220	4	10	14	12	9	21
4	City Hall East	1,192	18	65	83	69	41	110
5	Ocean Center Building Reuse	1,247	41	59	100	60	38	98
6	Oceanaire Residential Project[3]	1,436	22	89	111	86	48	134
7	The Pike Outlet Conversion Project	2,266	41	22	63	85	124	209
8	442 West Ocean Boulevard Apratments[4]	632	10	38	48	38	21	59
9	SRG 1st Alamitos Development	922	13	52	65	52	28	80
10	200 W. Ocean Boulevard	801	12	40	52	43	26	69
11	City Ventures Development	232	3	15	18	14	7	21
12	Shoreline Gateway[5]	4,381	60	173	233	226	156	382
Total Cumulative Projects Trip Generation Potential		**14,732**	**251**	**640**	**891**	**761**	**545**	**1,306**

Source: LLG, TIA, July 2015.
[1]Source: Trip Generation, 9th Edition, Institute of Transportation Engineers (ITE).
[2]Source: 207 East Seaside Way Apartments Project Traffic Impact Analysis, prepared by LLG Irvine.
[3]Source: Oceanaire Apartments Traffic Impact Analysis, prepared by Michael Baker International.
[4]Source: 442 West Ocean Boulevard Apartments Project Traffic Impact Analysis, prepared by LLG Irvine.
[5]Trip Generation forecast based on the approach published in the City of Long Beach Shoreline Gateway EIR Traffic Impact Study, June 2006, prepared by MMA. Project Development Totals based on information provided by the City of Long Beach.

The a.m. and p.m. peak hour traffic volumes associated with the twelve cumulative projects are presented in Figures 4.6-6a and 4.6-6b above, respectively.

Year 2020 Traffic Volumes. Figures 4.6-7a and 4.6-7b present future a.m. and p.m. peak hour cumulative traffic volumes at the ten (10) key study intersections for the Year 2020, respectively. The cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic and cumulative projects traffic.

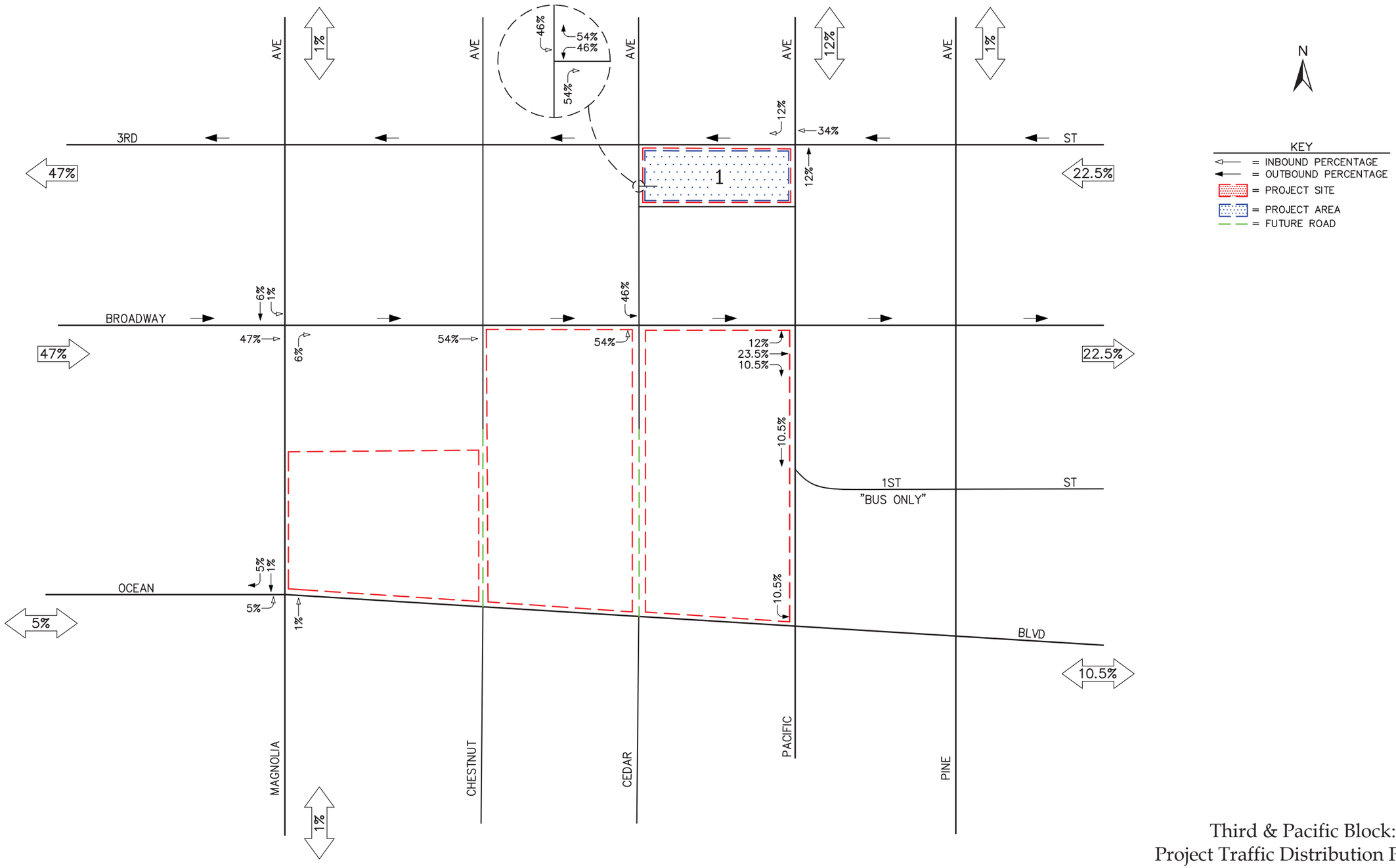
Figures 4.6-8a and 4.6-8b illustrate Year 2020 forecast a.m. and p.m. peak hour traffic volumes with the inclusion of the trips generated by the proposed project.



Existing Civic Center:
Traffic Distribution Patterns

Source: Linscott, Law & Greenspan, 2015

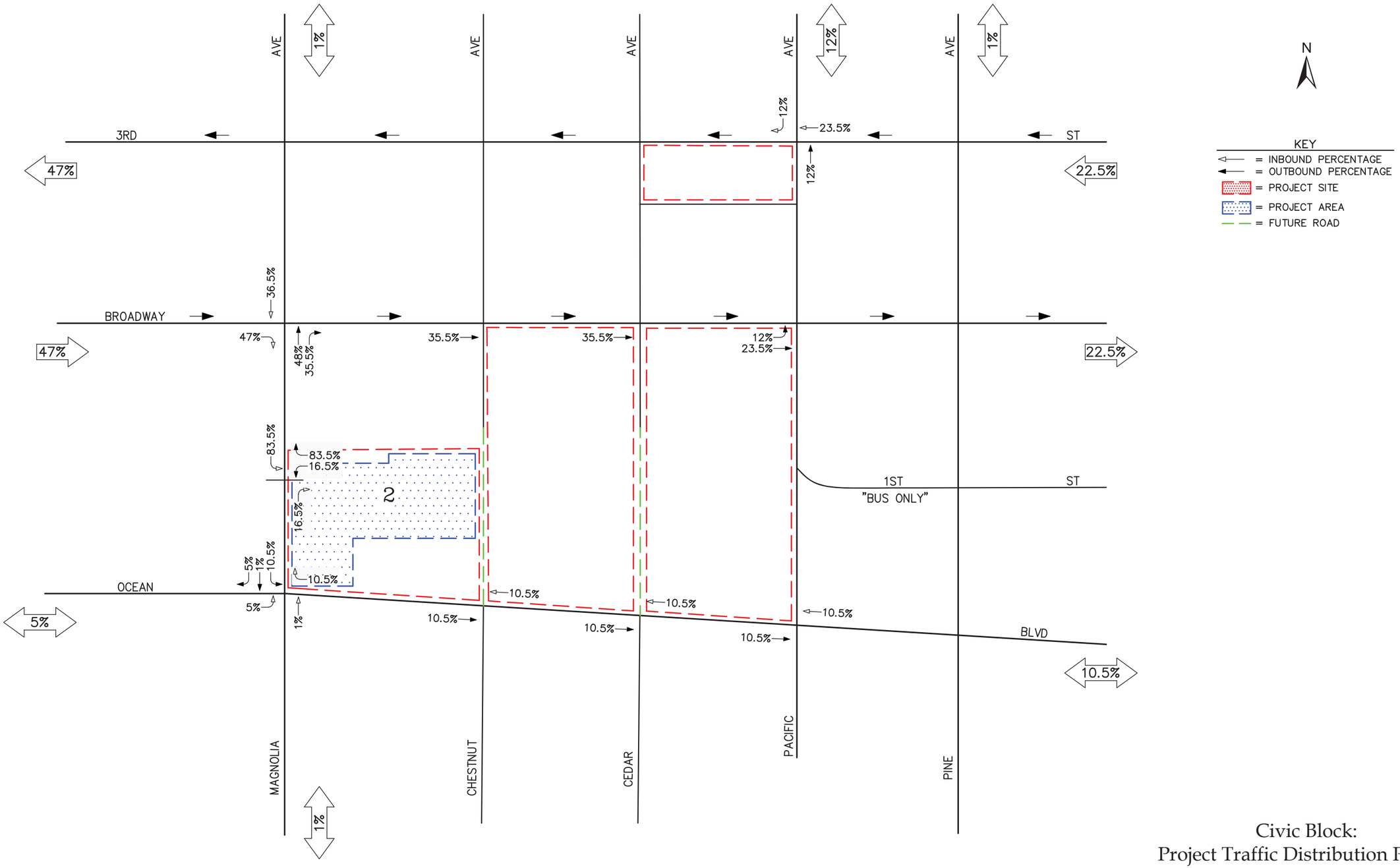
Figure 4.6-3a



Third & Pacific Block:
Project Traffic Distribution Pattern

Source: Linscott, Law & Greenspan, 2015

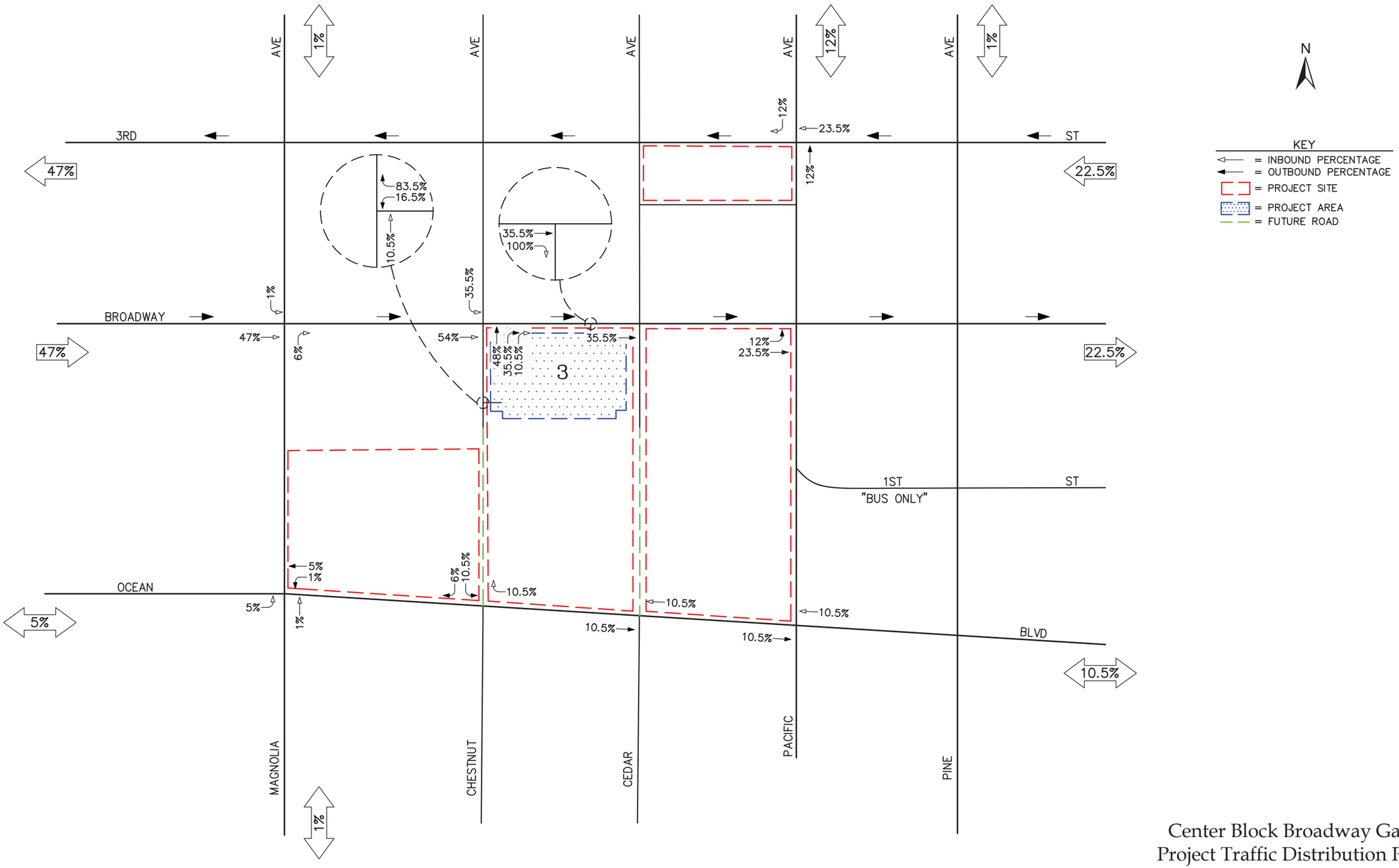
Figure 4.6-3b



Civic Block:
Project Traffic Distribution Pattern

Source: Linscott, Law & Greenspan, 2015

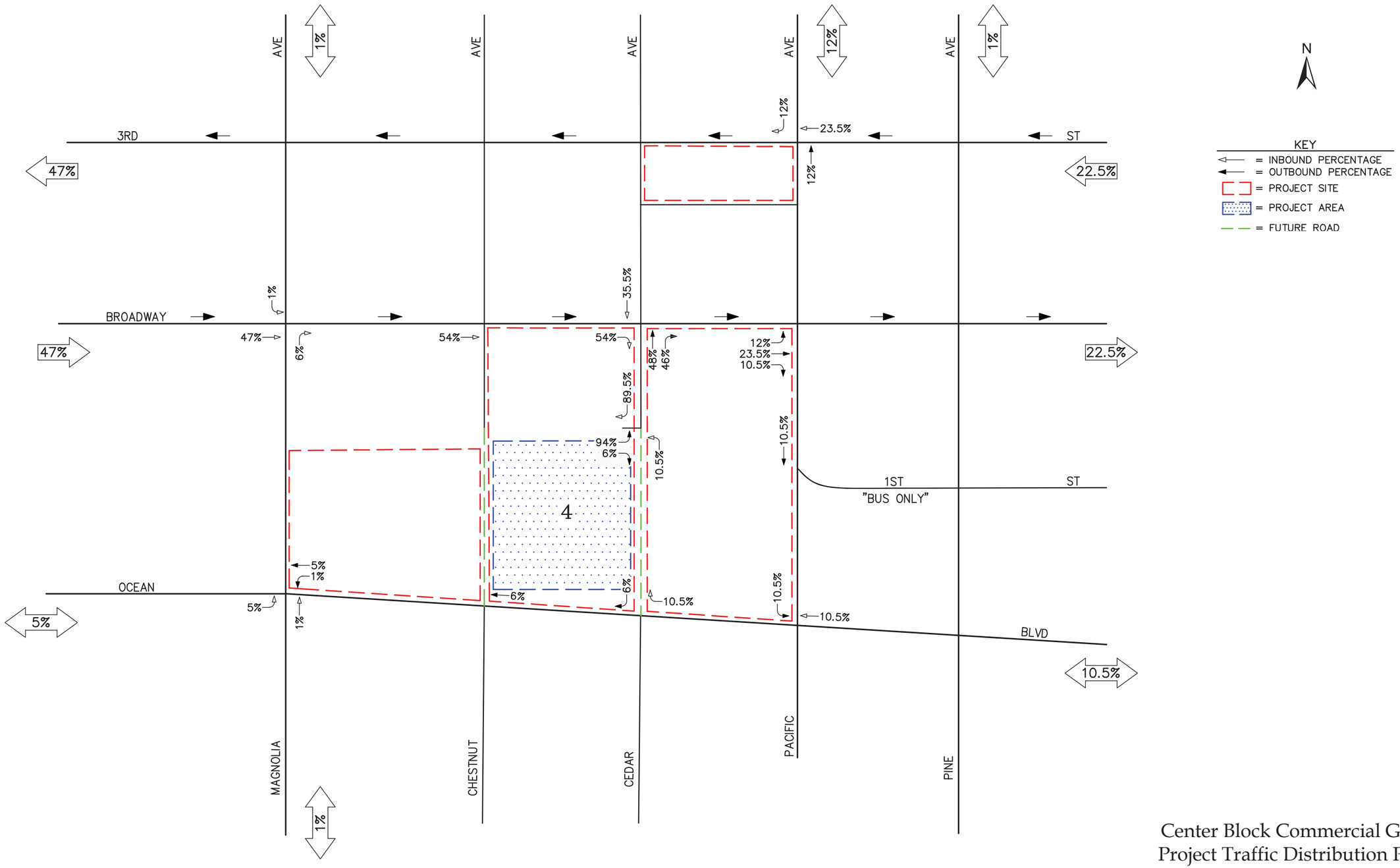
Figure 4.6-3c



Center Block Broadway Garage:
Project Traffic Distribution Pattern

Source: Linscott, Law & Greenspan, 2015

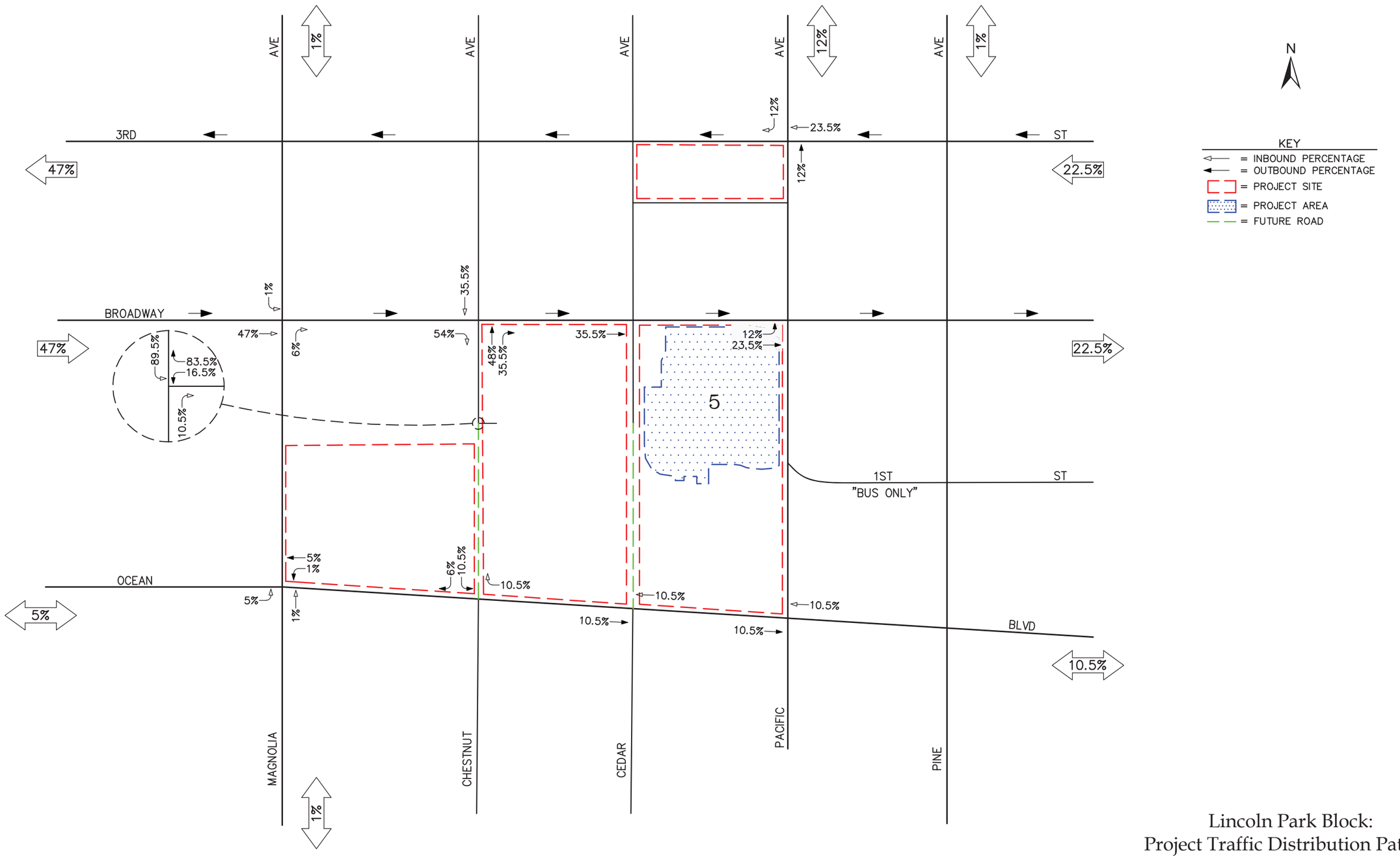
Figure 4.6-3d



Center Block Commercial Garage:
Project Traffic Distribution Pattern

Source: Linscott, Law & Greenspan, 2015

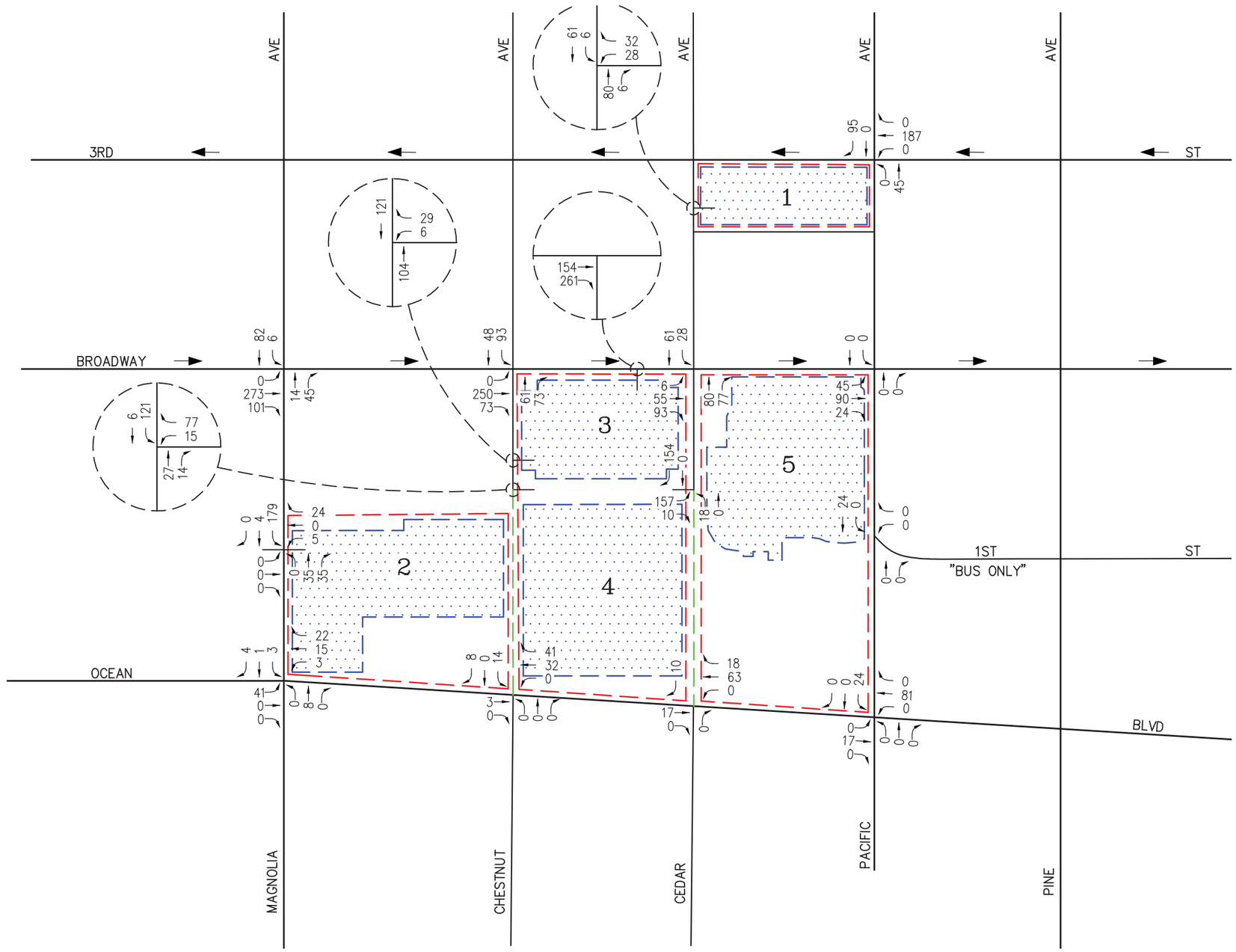
Figure 4.6-3e



Lincoln Park Block:
Project Traffic Distribution Pattern

Figure 4.6-3f

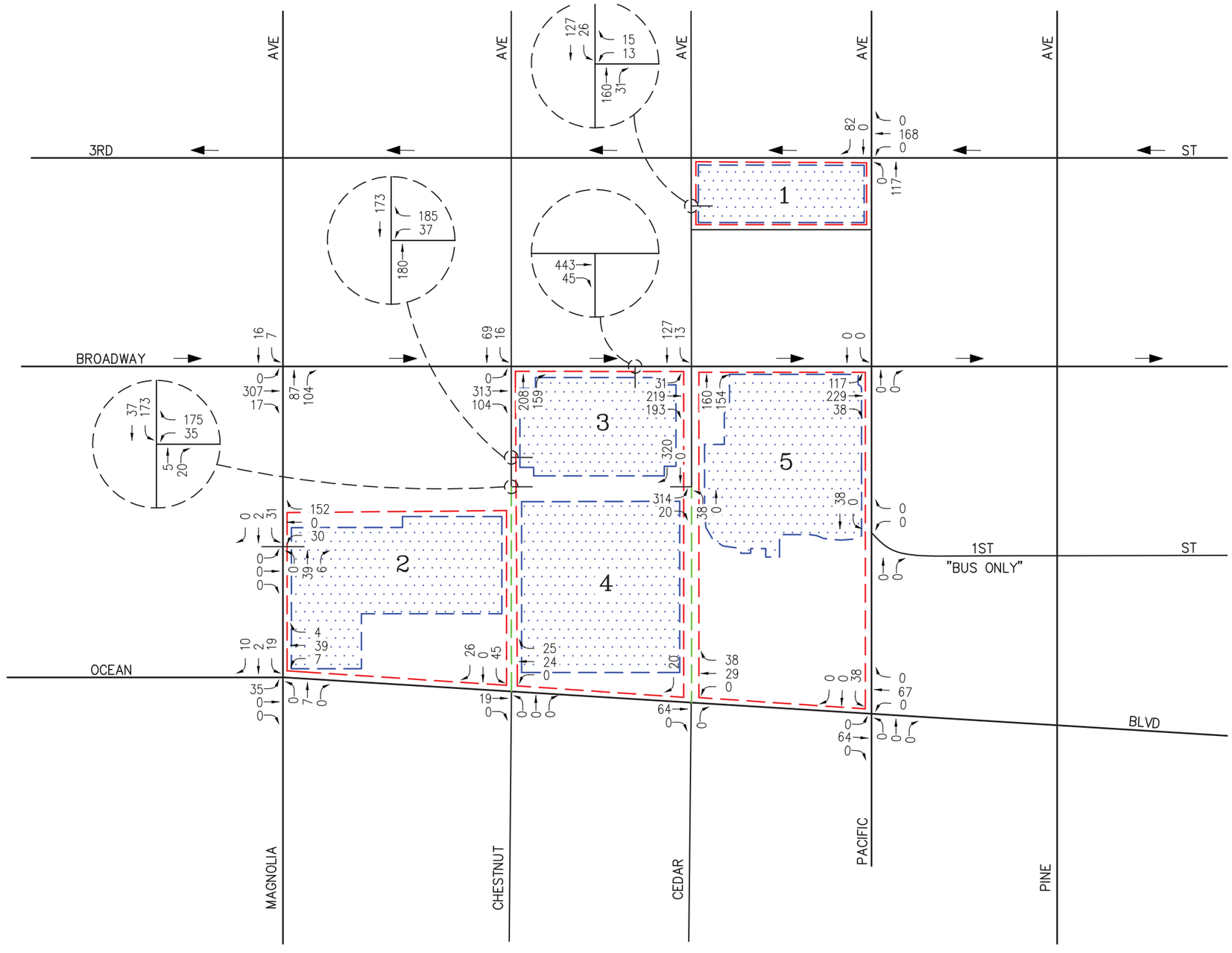
Source: Linscott, Law & Greenspan, 2015



A.M. Peak Hour Project Traffic Volumes

Figure 4.6-4a

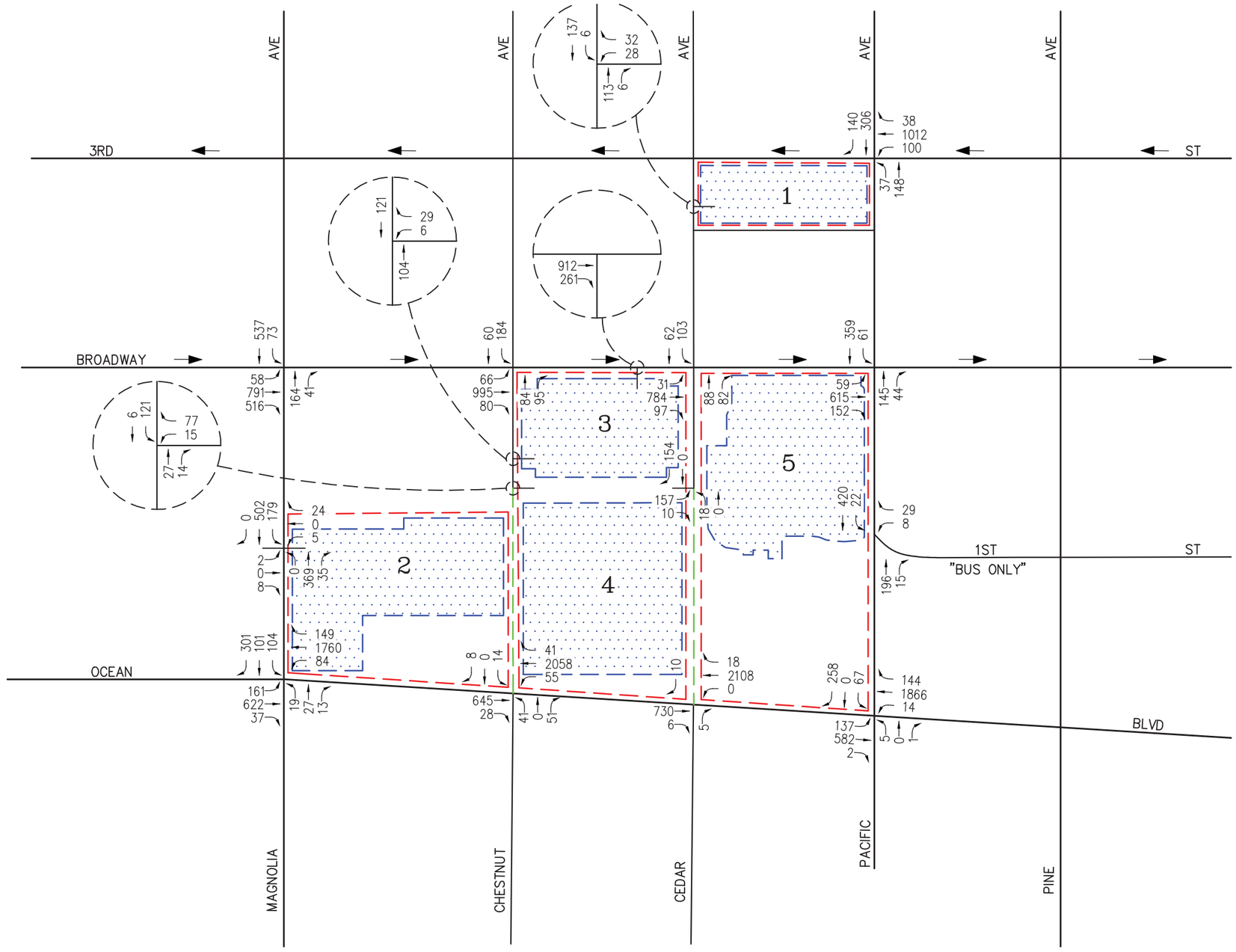
Source: Linscott, Law & Greenspan, 2015



P.M. Peak Hour Project Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

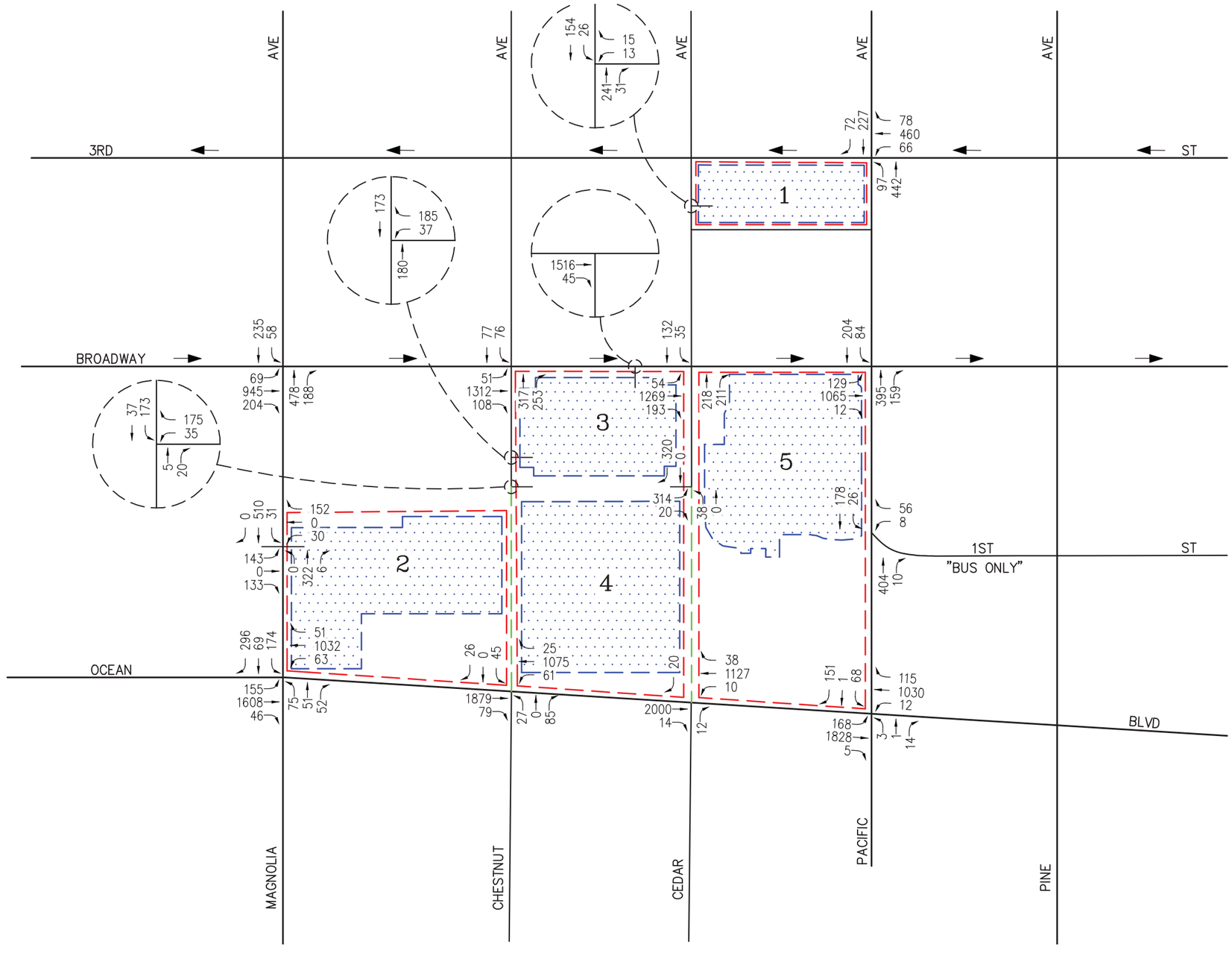
Figure 4.6-4b



Existing Plus Project A.M.
Peak Hour Traffic Volumes

Figure 4.6-5a

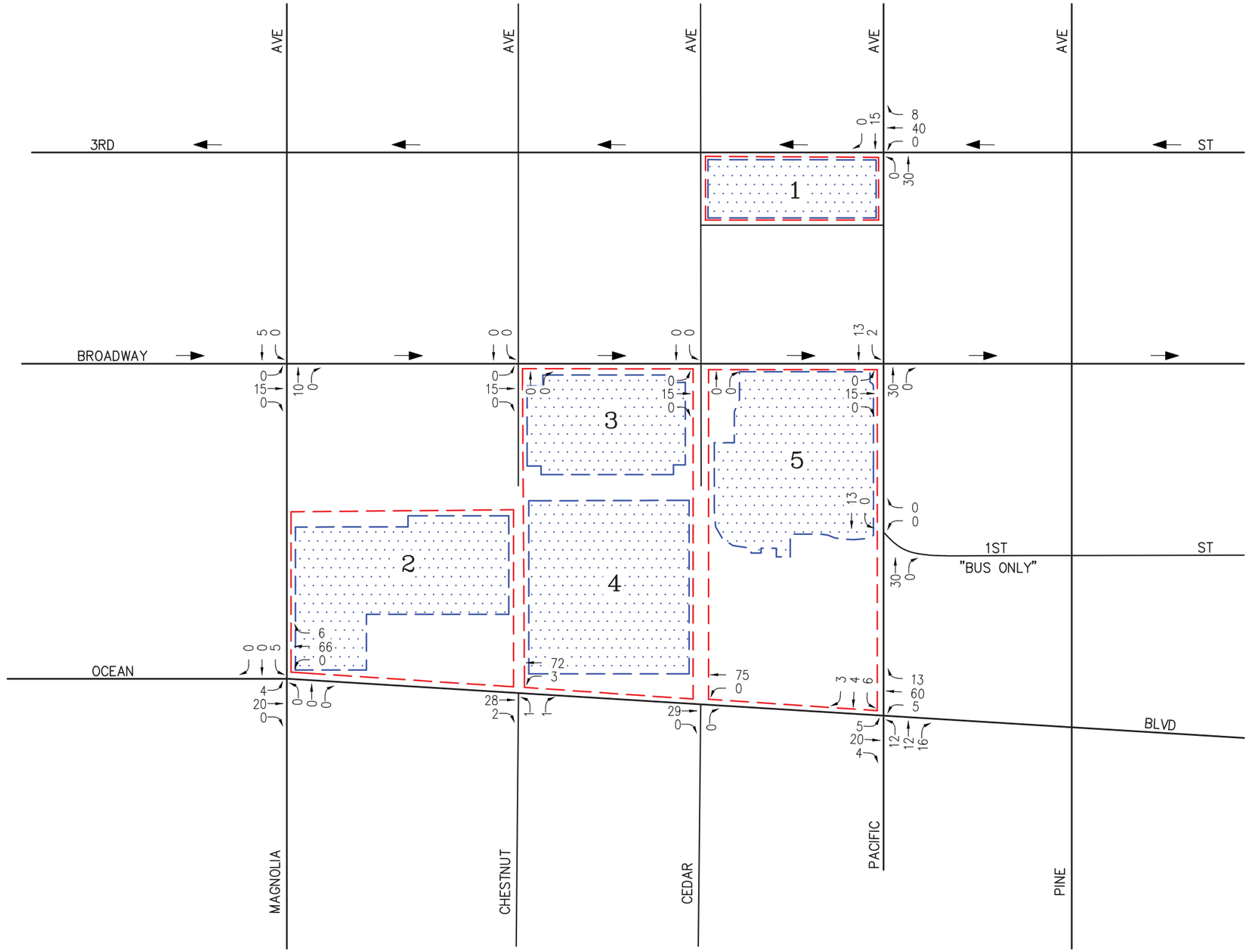
Source: Linscott, Law & Greenspan, 2015



Existing Plus Project P.M. Peak Hour Traffic Volumes

Figure 4.6-5b

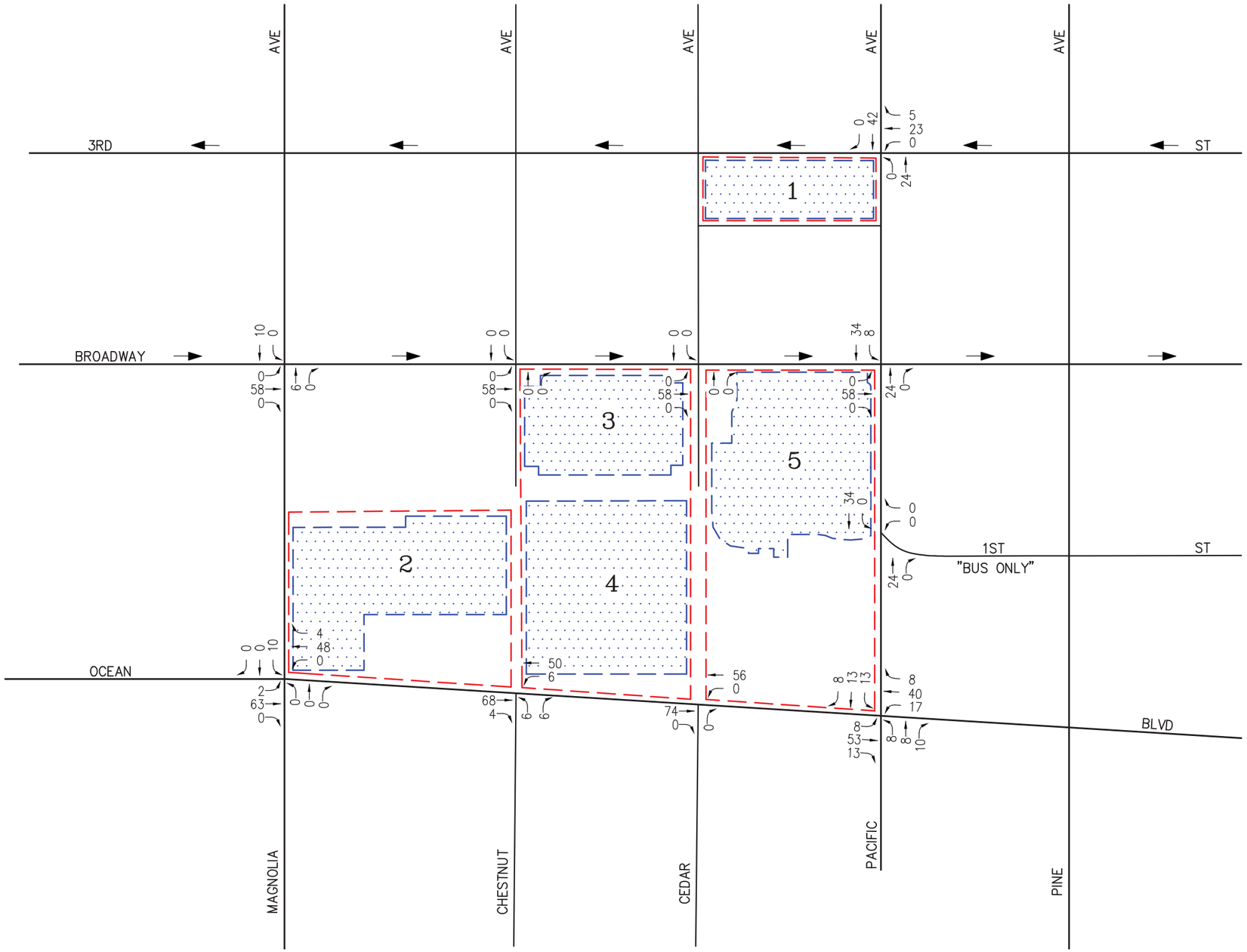
Source: Linscott, Law & Greenspan, 2015



A.M. Peak Hour Cumulative Traffic Volumes

Figure 4.6-6a

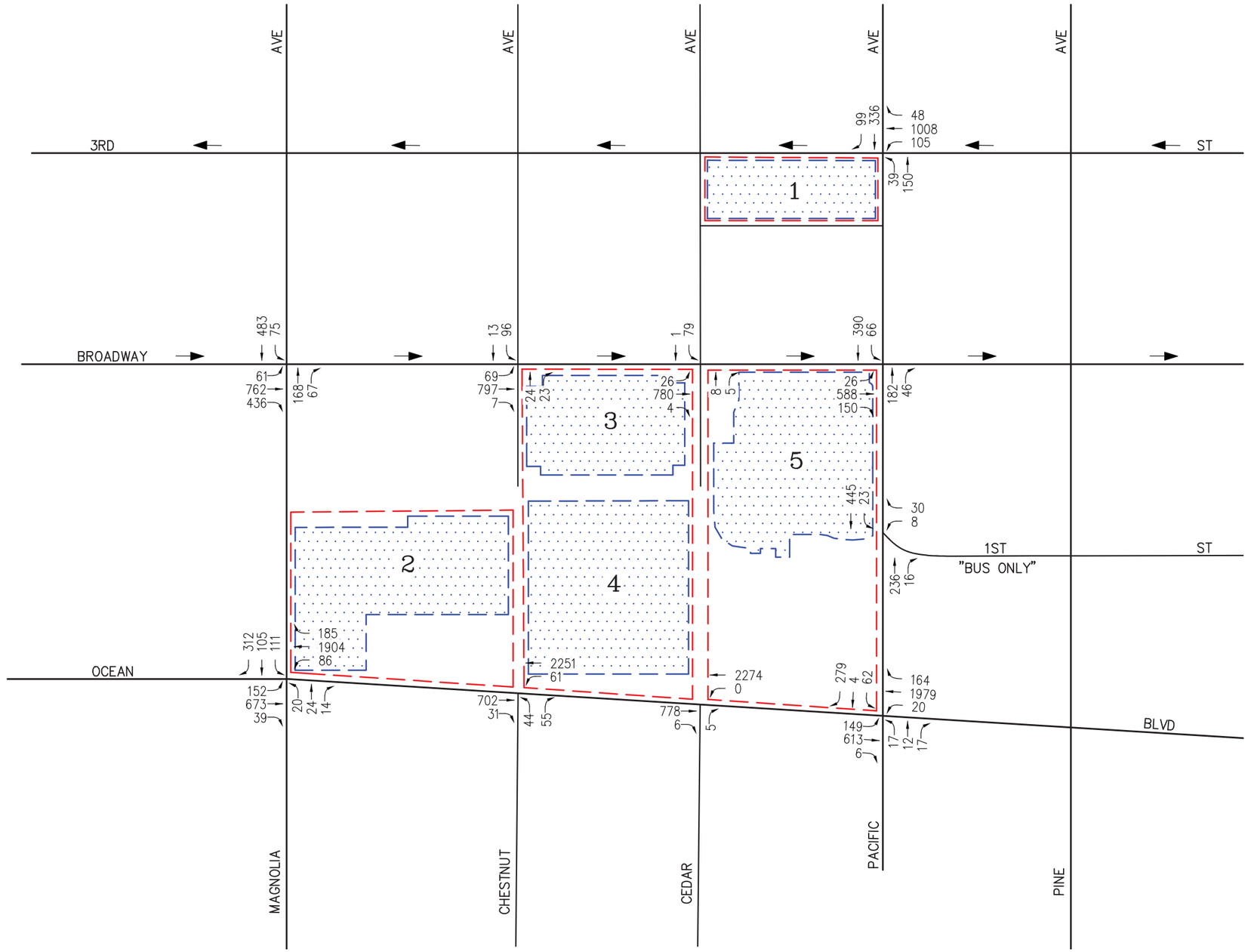
Source: Linscott, Law & Greenspan, 2015



P.M. Peak Hour Cumulative Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

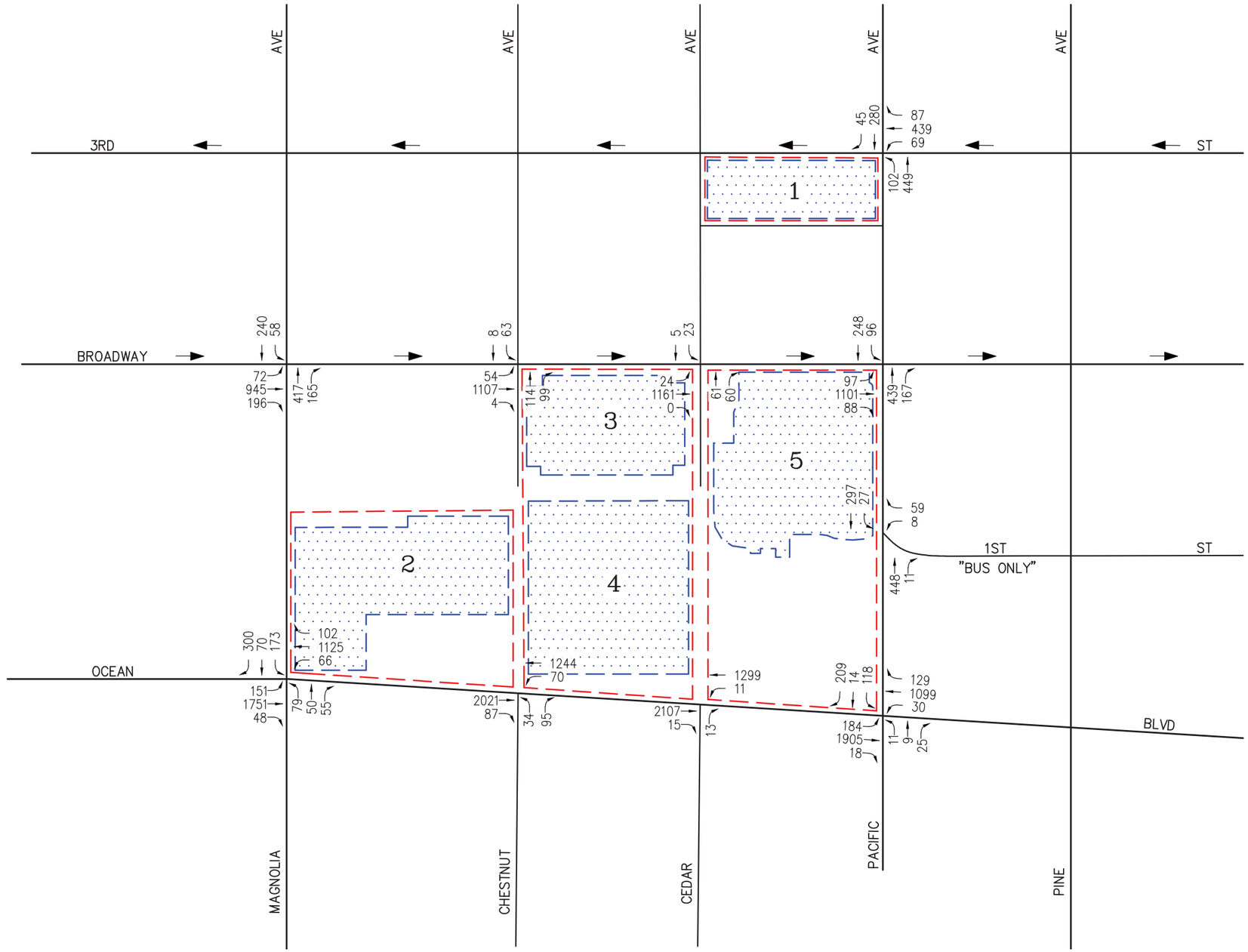
Figure 4.6-6b



Year 2020 Cumulative
A.M. Peak Hour Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

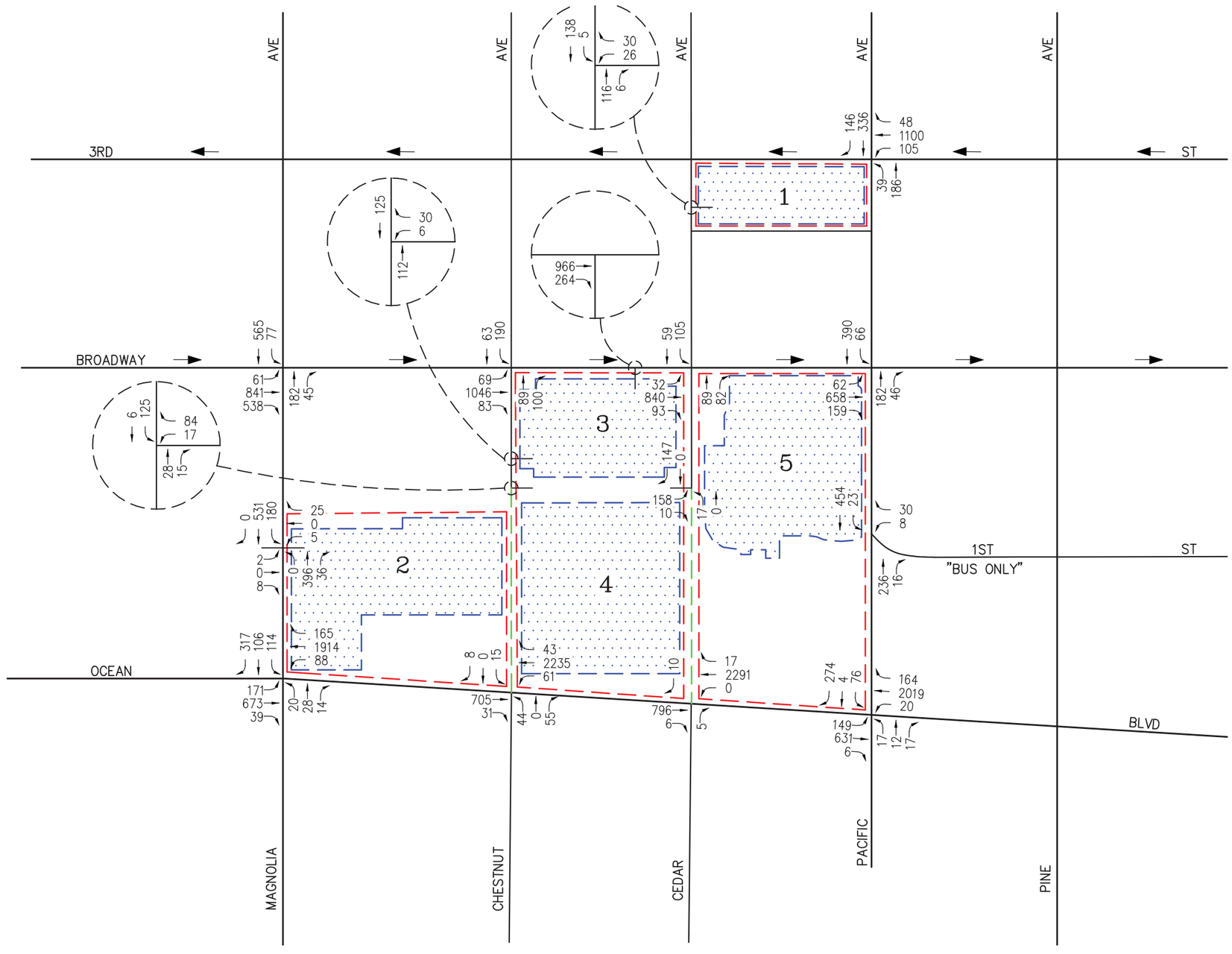
Figure 4.6-7a



Year 2020 Cumulative
P.M. Peak Hour Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

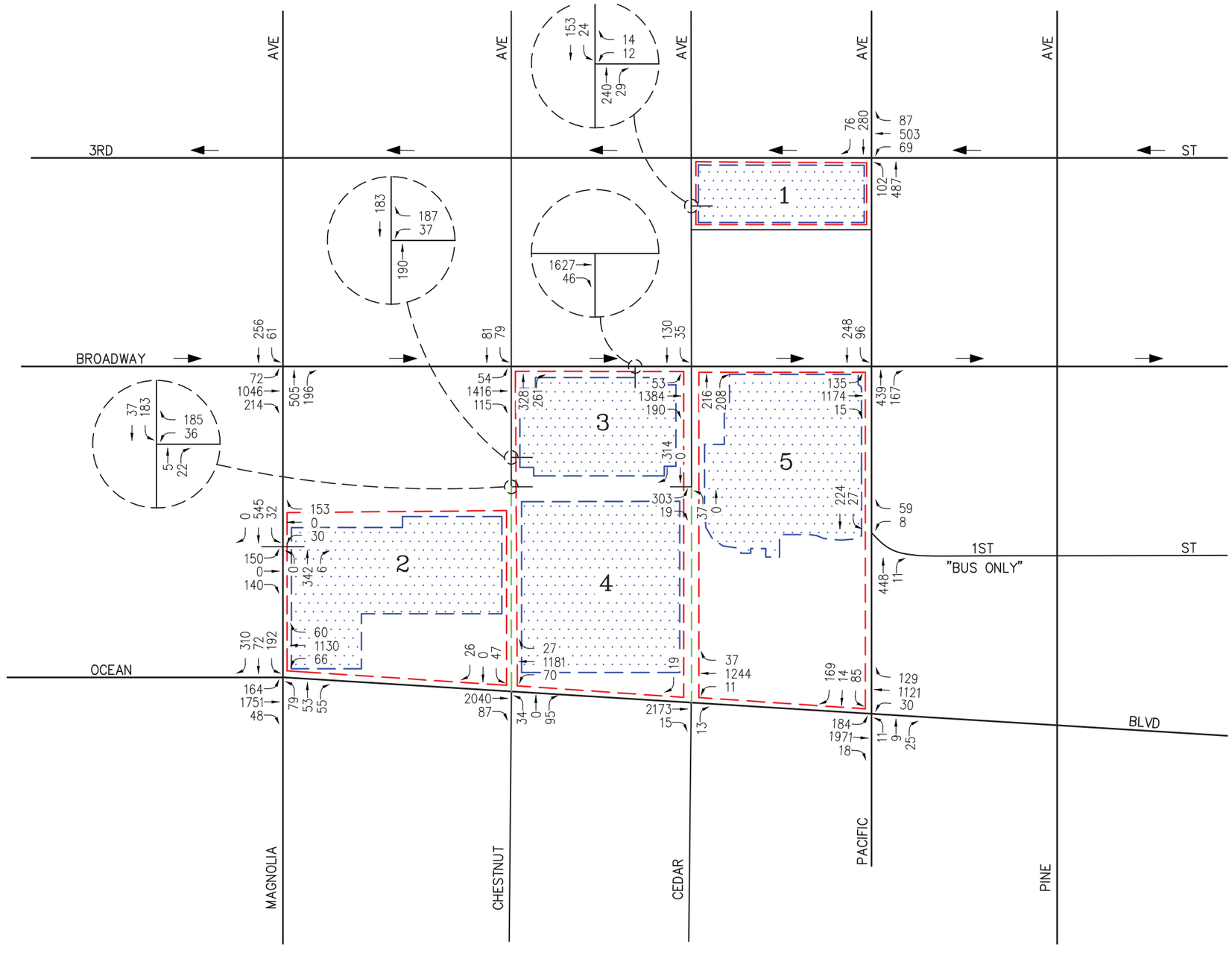
Figure 4.6-7b



Year 2020 Cumulative Plus Project
A.M. Peak Hour Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

Figure 4.6-8a



Year 2020 Cumulative Plus Project
P.M. Peak Hour Traffic Volumes

Source: Linscott, Law & Greenspan, 2015

Figure 4.6-8b

Significance Thresholds. Impacts related to transportation and circulation would be potentially significant if development facilitated by the proposed project would:

- *Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of a circulation system, taking into account all modes of transportation, including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit*
- *Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways*
- *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks*
- *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*
- *Result in inadequate emergency access*
- *Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities*

The intersections of Alamitos Avenue with Seventh Street and with Ocean Boulevard are the only Downtown Plan Area intersections that are CMP arterial monitoring locations (Los Angeles County Metropolitan Transportation Authority, 2010). Both CMP arterial monitoring locations within the Downtown Plan Area are outside the project study area. The Downtown Plan Final EIR identified unavoidably significant impacts at both locations, but traffic generated by the proposed project is less than what was considered in the Downtown Plan Final EIR. Therefore, the proposed project would not create any new impact related to the Los Angeles County CMP beyond what was identified in the Downtown Plan Final EIR.

According the City of Long Beach, impacts to intersections are considered significant if:

- *An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained; and*
- *The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901). At unsignalized intersections, a "significant" adverse traffic impact is defined as a project that: adds 2% or more traffic delay (seconds per vehicle) at an intersection operating LOS E or F.*

The Initial Study for the proposed project (Appendix A) determined that the following issues are less than significant and, therefore, thresholds related to these topics are not discussed further in this SEIR:

- *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks*
- *Result in inadequate emergency access*
- *Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities*

Regarding adopted alternative transportation plans, the Downtown Plan EIR determined that the Downtown Plan would have no impact with regard to alternative transportation. The proposed project is within the parameters of the Downtown Plan. Therefore, the Civic Center Project would not result in any new significant impacts to alternative transportation plans or increase the severity of significant impacts to alternative transportation plans beyond those identified in the Downtown Plan EIR.

Traffic Impact Analysis Scenarios. The following scenarios are those for which V/C calculations have been performed using the ICU/HCM methodologies:

1. *Existing Traffic Conditions;*
2. *Existing Plus Project Traffic Conditions;*
3. *Existing Plus Project Traffic Conditions with Improvements, if necessary;*
4. *Year 2020 Cumulative Traffic Conditions;*
5. *Year 2020 Cumulative Plus Project Traffic Conditions; and*
6. *Year 2020 Cumulative Plus Project Traffic Conditions with Improvements, if necessary.*

b. Project Impacts and Mitigation Measures.

Threshold	*Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of a circulation system, taking into account all modes of transportation, including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit;*
Quantitative Threshold	*An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained*
Quantitative Threshold	*The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901). At unsignalized intersections, a "significant" adverse traffic impact is defined as a project that: adds 2% or more traffic delay (seconds per vehicle) at an intersection operating LOS E or F.*

Impact T-1 **Implementation of the proposed project would increase traffic on the surrounding street network. The Downtown Plan EIR determined that buildout of the Downtown Plan would result in Class I, significant and unavoidable traffic impacts. The proposed project would contribute to this impact; however, project-generated traffic would not cause any intersection to exceed City standards under existing plus project traffic conditions. Impacts associated with the proposed project would be Class III, *less than significant*.**

Table 4.6-7 summarizes the peak hour LOS results at the study intersections for existing plus project traffic conditions. Under existing conditions, all ten intersections operate at acceptable LOS C or better during the a.m. and p.m. peak hours. As shown in Table 4.6-7, traffic associated with the proposed project would not significantly impact any of the ten intersections, as all ten intersections would continue to operate at acceptable LOS D or better during the a.m. and p.m. peak hours with the addition of project generated traffic to existing traffic. Therefore, the impacts to local intersections would be less than significant under existing plus project traffic conditions.

Table 4.6-7
Existing Plus Project Conditions for Study Intersections

Key Intersection	Time Period	Existing Traffic Conditions		Existing Plus Project Traffic Conditions			
		ICU/HCM	LOS	ICU/HCM	LOS	Increase	Significant Impact?[1] (<LOS D)
1. Magnolia Avenue at Broadway	a.m.	0.502	A	0.591	A	0.089	No
	p.m.	0.570	A	0.640	B	0.070	No
2. Chestnut Avenue at Broadway	a.m.	0.432	A	0.626	B	0.194	No
	p.m.	0.553	A	0.847	D	0.294	No
3. Cedar Avenue at Broadway	a.m.	0.432	A	0.581	A	0.149	No
	p.m.	0.531	A	0.843	D	0.312	No
4. Pacific Avenue at Broadway	a.m.	0.478	A	0.502	A	0.024	No
	p.m.	0.663	B	0.663	B	0.000	No
5. Magnolia Avenue at Ocean Boulevard	a.m.	0.770	C	0.787	C	0.017	No
	p.m.	0.730	C	0.736	C	0.006	No
6. Chestnut Avenue at Ocean Boulevard	a.m.	0.564	A	0.584	A	0.020	No
	p.m.	0.595	A	0.645	B	0.050	No
7. Cedar Avenue at Ocean Boulevard	a.m.	9.7 s/v	A	14.7 s/v	B	5.0 s/v	No
	p.m.	17.2 s/v	C	18.0 s/v	C	0.8 s/v	No
8. Pacific Avenue at Ocean Boulevard	a.m.	0.689	B	0.694	B	0.005	No
	p.m.	0.559	A	0.562	A	0.003	No
9. Pacific Avenue at Third Street	a.m.	0.569	A	0.598	A	0.029	No
	p.m.	0.430	A	0.457	A	0.027	No
10. Pacific Avenue at First Street	a.m.	0.302	A	0.304	A	0.002	No
	p.m.	0.336	A	0.336	A	0.000	No

Source: LLG, July 2015; see Appendix E for full TIA report.

s/v = seconds per vehicle, LOS = Level of Service

[1] According the City of Long Beach, impacts to intersections are considered significant if an unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained.

Mitigation Measures. Mitigation would not be required.

Significance After Mitigation. Impacts would be less than significant without mitigation. Nonetheless, Downtown Plan EIR Mitigation Measure Traf-1(a) includes implementing transit facilities and programs to encourage public transit usage and development of Transportation Demand Management Policies. Downtown Plan EIR Mitigation Measures AQ-2(a) includes measures to require commercial development to promote a ride-share program for employees, and secure bicycle parking areas, which would apply to the proposed project. These measures would further reduce the project's traffic generation.

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

Impact T-2 The proposed project does not include any hazardous design features. Impacts associated with the proposed project would be Class III, *less than significant*.

Access to the project site could result in hazardous design features, if project driveways operate at LOS that would prevent motorists from entering and exiting the project site safely. The proposed project will provide three new parking garages which also includes a new

subterranean garage below the proposed City Hall and Port Building. Vehicular access for the proposed project includes the following:

- ***Civic Block:*** *Primary access to the Civic Block subterranean parking structure will be provided from Magnolia Avenue (Project Driveway F). Access to the existing Broadway garage will continue to be provided by an ingress-only driveway on Broadway (Project Driveway B) as well as an egress-only driveway along Chestnut (Project Driveway C).*
- ***Center Block:*** *A new subterranean parking structure will be constructed, with primary vehicular access provided by the future extension of Cedar Avenue between Broadway and Ocean Boulevard (Project Driveway E).*
- ***Lincoln Park and New Library Block:*** *Access to the existing Lincoln garage will continue to be provided from the Cedar Avenue and Pacific Avenue access ramps in the interim, but will ultimately be served by the "Lincoln Alley" (Project Driveway D).*
- ***Third and Pacific Block:*** *Access to the site's parking garage will be provided from Cedar Avenue (Project Driveway A).*

Table 4.6-8 summarizes the Year 2020 cumulative plus peak hour level of service results for the six project driveways. The project driveways are forecast to operate at an acceptable LOS C or better during the a.m. and p.m. peak hours in the Year 2020. As such, motorists entering and exiting the project site would be able to do so comfortably, safely, and without undue congestion. Therefore, the proposed project would have a less than significant impact on access to the project site or surrounding properties.

Table 4.6-8
Year 2020 Cumulative Plus Project
Driveway Peak Hour Levels of Service Summary

Driveway	Control Type	Time Period	HCM (s/v)	LOS
A. Cedar Avenue at Project Driveway A	One-Way Stop	a.m. p.m.	9.7 10.8	A B
B. Project Driveway B at Broadway	Uncontrolled Ingress Only	a.m. p.m.	-- --	-- --
C. Chestnut Avenue at Project Driveway C	One-Way Stop	a.m. p.m.	9.0 10.2	A B
D. Chestnut Avenue at Project Driveway D	One-Way Stop	a.m. p.m.	9.2 10.1	A B
E. Cedar Avenue at Project Driveway E	One-Way Stop	a.m. p.m.	9.4 11.0	A B
F. Magnolia Avenue at Project Driveway F	Two-Way Stop	a.m. p.m.	12.0 21.4	B C

Source: LLG, July 2015; see Appendix E for full TIA report.
s/v = seconds per vehicle (delay), LOS = Level of Service

Mitigation Measures. Mitigation would not be required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

b. Cumulative Impacts. Cumulative development within the project area would cause increases in traffic on area roadways. Section 3, Environmental Setting, describes planned and pending projects in the vicinity of the project site. Table 4.6-9 summarizes existing, cumulative, and cumulative plus project intersection capacities. Table 4.6-9 indicates that all ten intersections are forecast to operate at an acceptable LOS D or better during the a.m. and p.m. peak hour with the addition of ambient traffic growth and cumulative development. Therefore, the project's impact to local intersections would be less than significant under Year 2020 cumulative traffic conditions.

Table 4.6-9
Year 2020 Cumulative Plus Project Peak Hour Intersection Capacity Analysis Summary

Key Intersection	Time Period	Existing Conditions		Year 2020 Cumulative (No Project) Conditions		Year 2020 Cumulative Plus Project Conditions		Project Increase	Significant Impact?[1] (< LOSD)
		ICU/ HCM	LOS	ICU/ HCM	LOS	ICU/ HCM	LOS		
1. Magnolia Avenue at Boradway	a.m. p.m.	0.502 0.570	A A	0.523 0.613	A B	0.613 0.684	B B	0.090 0.071	No No
2. Chestnut Avenue at Broadway	a.m. p.m.	0.432 0.553	A A	0.450 0.591	A A	0.644 0.884	B D	0.194 0.293	No No
3. Cedar Avenue at Broadway	a.m. p.m.	0.432 0.531	A A	0.450 0.568	A A	0.600 0.880	A D	0.150 0.312	No No
4. Pacific Avenue at Broadway	a.m. p.m.	0.478 0.663	A B	0.503 0.719	A C	0.527 0.719	A C	0.024 0.000	No No
5. Magnolia Avenue at Ocean Boulevard	a.m. p.m.	0.770 0.730	C C	0.819 0.773	D C	0.836 0.779	D C	0.017 0.006	No No
6. Chestnut Avenue at Ocean Boulevard	a.m. p.m.	0.564 0.595	A A	0.603 0.642	B B	0.623 0.692	B B	0.020 0.050	No No
7. Cedar Avenue at Ocean Boulevard	a.m. p.m.	9.7 s/v 17.2s/v	A C	9.9 s/v 19.4 s/v	A C	15.7 s/v 20.3 s/v	C C	5.8s/v 0.9s/v	No No
8. Pacific Avenue at Ocean Boulevard	a.m. p.m.	0.689 0.559	B A	0.755 0.629	C B	0.761 0.632	C B	0.006 0.003	No No
9. Pacific Avenue at Third Street	a.m. p.m.	0.569 0.430	A A	0.609 0.466	B A	0.638 0.486	B A	0.029 0.020	No No
10. Pacific Avenue at First Street	a.m. p.m.	0.302 0.306	A A	0.313 0.352	A A	0.316 0.352	A A	0.003 0.000	No No

Source: LLG, July 2015; see Appendix E for full TIA report.

s/v = seconds per vehicle, LOS = Level of Service

[1] According the City of Long Beach, impacts to intersections are considered significant if an unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained.

5 OTHER CEQA-REQUIRED DISCUSSIONS

This section discusses growth-inducing impacts, irreversible environmental impacts, and energy impacts that would be caused by the project.

5.1 GROWTH INDUCEMENT

Section 15126(d) of the *CEQA Guidelines* requires a discussion of a proposed project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The proposed project's growth inducing potential is therefore considered significant if it could result in significant physical effects in one or more environmental issue areas.

5.1.1 Population Growth

The proposed project would add up to 780 residential units in Downtown Long Beach. The current population of Long Beach is 472,779 and the City has approximately 2.82 persons per household (California Department of Finance, 2015). Development of the proposed project would therefore add an estimated 2,200 residents (780 dwelling units x 2.82 people/dwelling unit), thus increasing the City's population to 474,979. The Southern California Association of Government's (SCAG) population growth forecast for Long Beach is 491,000 in 2020 and 534,100 in 2035 (SCAG RTP-SCS, 2012a). According to the City's General Plan Housing Element, realization of future housing development potential (7,270 new dwelling units by 2021) would result in an increase in the City's population of 20,501 persons, for a total population of 490,793 in 2021. Consequently, the population increase generated by the proposed project would not exceed SCAG or City of Long Beach citywide population forecasts.

As discussed in Section 3.0, *Environmental Setting*, planned and pending development within the City would add approximately 1,187 new residential units to the City. Based on the estimate of 2.82 persons per household, cumulative development within the City (including the proposed project) would add 5,547 people (1,187 units x 2.82 people/unit + 2,200 residents for proposed project) bringing the total population to 478,326 (472,779 + 5,547). This would not exceed SCAG's 2020 population projection for Long Beach of 491,000 or the Long Beach General Plan Housing Element's population projection of 490,793 by 2021.

5.1.2 Economic Growth

The project would generate temporary employment opportunities during construction, which would be expected to draw workers from the existing regional work force. Therefore, construction of the project would not be considered growth-inducing from a temporary employment standpoint.

The proposed project involves 240,000 gross square feet (gsf) of office space for the Port Building, 270,000 gsf of office space for City Hall staff and elected officials, a new 92,000 gsf library, 32,000 gsf of retail space, 8,000 gsf of restaurant space, and an estimated 290,400 gsf for a 200-room hotel. Of these uses, the retail space, restaurant space, and hotel would generate new

jobs. The Port Building, City Hall, and library would accommodate existing jobs that would be relocated to the new facilities. Table 5-1 shows the estimated jobs generated by the other proposed uses.

Table 5-1
New Employees Accommodated by Proposed Project

Land Use	Area (sf)	Area (acres)	Employees per Acre	Total Employees
Retail	32,000	0.73	18.86	14
Restaurant[1]	8,000	0.18	25.76	5
Hotel	290,400	6.67	51.91	346
			Total	**365**

Source: Table C-1, Range of Employment Densities (Employees Per Acre) by County (Southern California Association of Governments (SCAG), Employment Density Study Summary Report, October 31, 2001).
[1] Employee rate for "Other Retail/Services" in SCAG Table C-1 was used, as "Restaurant" is not listed.

The proposed project would generate an estimated 2,200 new residents and 365 new jobs in Long Beach. This would contribute to economic growth. The additional population would likely contribute to the local economy as demand for general goods increases, which in turn could result in economic growth for various sectors. Nevertheless, the proposed project would not be expected to induce economic expansion to the extent that significant environmental impacts directly associated with the project's contribution would occur.

The Southern California Association of Government estimated employment (jobs) in the City to be 168,100 in 2008. SCAG's employment growth forecast for Long Beach is 176,000 in 2020 and 184,800 in 2035 (SCAG, 2012a). Therefore, jobs are expected to increase in the City by approximately 7,900 between 2008 and 2020 and approximately 16,700 between 2008 and 2035. Consequently, the employment increase generated by the proposed project would account for approximately 4.6 percent of job growth between 2008 and 2020 and would not exceed SCAG employment forecasts.

5.1.3 Removal of Obstacles to Growth

The project site is located in a fully urbanized area that is well served by existing infrastructure. Existing utilities in Long Beach would be adequate to serve the proposed project. The project would be served by the Sanitation Districts of Los Angeles County (LACSD), with wastewater going to the Joint Water Pollution Control Plan (JWPCP). The JWPCP has the capacity to treat 400 million gallons per day (mgd) and currently processes an average flow of 263.4 mgd (LACSD, May 14, 2015 NOP Response; see Appendix A). This existing wastewater infrastructure would be adequate to serve the proposed project and no capacity expansion would be necessary. Potable water is served by the Long Beach Water Department. As discussed in Section XVII, *Utilities and Service Systems,* and IX, *Hydrology and Water Quality,* of the Initial Study, the proposed project is well served by existing infrastructure. The existing infrastructure would be adequate and no capacity expansion would be necessary to serve the project.

The proposed project would include the extension of Chestnut Avenue and Cedar Avenue through the project site. However, these roads would connect existing roads in an urban environment and would not provide for any substantial capacity increasing transportation or circulation improvements. Because the project constitutes redevelopment within an urbanized area and does not require the extension of new infrastructure through undeveloped areas, project implementation would not remove an obstacle to growth.

5.2 IRREVERSIBLE ENVIRONMENTAL EFFECTS

The *CEQA Guidelines* require that EIRs evaluating projects involving amendments to public plans, ordinances, or policies contain a discussion of significant irreversible environmental changes. CEQA also requires decision makers to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. This section addresses non-renewable resources, the commitment of future generations to the proposed uses, and irreversible impacts associated with the proposed project.

The proposed project would redevelop an urban area within the City of Long Beach. No previously undeveloped land would be converted for the project. Construction and operation of the project would irreversibly commit construction materials and non-renewable energy resources. The project would involve the use of building materials and energy, some of which are non-renewable resources. Consumption of these resources would occur with any development in the region and are not unique to the project. The increased intensity of residential, office, and commercial development would also irreversibly increase local demand for non-renewable energy resources such as petroleum products and natural gas. However, increasingly efficient building design and automobile engines are expected to offset this demand to some degree. In addition, the proposed project would be subject to the energy conservation requirements of the California Energy Code (Title 24, Part 6, of the California Code of Regulations, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*) and the California Green Building Standards Code (Title 24, Part 11 of the California Code of Regulations). The California Energy Code provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California. The project is required to exceed Title 24 standards that are in effect at the time of development by 20 percent and to achieve a 25 percent reduction in electricity use through such measures as photovoltaic cells in compliance with Downtown Area Plan EIR Mitigation Measure AQ-2.

The project would require a commitment of law enforcement, fire protection, water supply, wastewater treatment, and solid waste disposal services. However, as discussed in Section XIV, *Public Services,* and Section XVII, *Utilities and Service Systems* of the Initial Study, impacts to these service systems would be less than significant.

Primary impacts related to consumption of non-renewable and slowly renewable resources would be less than significant because the proposed project would not use unusual amounts of energy or construction materials, as development would be primarily comprised of residential uses, office space, and retail space. Consumption of these resources would occur with any development in the region and are not unique to the proposed project. Additional vehicle trips associated with the proposed project would incrementally increase local traffic and regional air pollutant and greenhouse gas emissions as discussed in Sections 4.2, *Air Quality,* Section 4.4, *Greenhouse Gas Emissions,* and Section 4.6, *Transportation and Traffic*. Impacts resulting from

traffic generated by future development would be less than significant or would be less than significant with mitigation incorporated.

The project would contribute to significant and unavoidable impacts previously identified in the Downtown Plan EIR. The Downtown Plan EIR determined that operational emissions associated with buildout of the Downtown Plan would result in a significant and unavoidable impact. Operation of the project would generate reactive organic gas (ROG) emissions that would exceed South Coast Air Quality Management District (SCAQMD) operational significance thresholds and contribute to this impact. In addition, the Downtown Plan EIR determined that implementation of the Downtown Plan could result in exposure of receptors to short- and long-term emissions of toxic air contaminants (TACs) from onsite and offsite stationary and mobile sources; this impact was determined by the Downtown Plan EIR to be significant and unavoidable. The project would place residential uses within the Downtown Plan Area, contributing to this significant and unavoidable impact. Furthermore, the Downtown Plan EIR determined that implementation of the Downtown Plan would result in significant and unavoidable cumulative air quality impacts. As development of the project site was anticipated in the Downtown Plan EIR, the project would contribute to the Downtown Plan's cumulative air quality impacts and would be significant and unavoidable.

The project would result in a significant and unavoidable impact to cultural resources. Construction of the project would involve the demolition of the Old Courthouse and the Long Beach City Hall-Library Complex, which have been identified as historical resources for the purposes of CEQA. Demolition of these buildings would contribute to the significant and unavoidable impact identified in the Downtown Plan EIR.

Lastly, construction activities associated with the project would generate noise that could exceed City of Long Beach standards at existing receptors; this impact would be significant and unavoidable. In addition, construction activities could subject nearby residents to excessive levels of ground-borne vibration. The Downtown Plan EIR and Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to construction-generated vibration would be significant and unavoidable. The project would contribute to the significant and unavoidable impact identified by the Downtown Plan EIR.

5.3 ENERGY EFFECTS

The *CEQA Guidelines* Appendix F requires that EIRs include a discussion of the potential energy consumption and/or conservation impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful or unnecessary consumption of energy.

The proposed project would involve the use of energy during the construction and operational phases of the project. Energy use during the construction phase would be in the form of fuel consumption (e.g., gasoline and diesel fuel) to operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. In addition, temporary grid power may also be provided to any temporary construction trailers or electric construction equipment. Long-term operation of the proposed project would require permanent grid connections for electricity and natural gas service to power internal and exterior building lighting, and heating and cooling systems. In addition, the increase in vehicle trips associated with the project would increase fuel consumption within the City.

Electricity service for the proposed project would be provided by Southern California Edison (SCE). SCE's power mix consists of approximately 20 percent renewable energy sources (wind, geothermal, solar, small hydro, and biomass) (SCE website, 2015). Gas service would be provided by the Long Beach Gas and Oil Department.

California used 296,628 gigawatt-hours (GWh) of electricity in 2013 (CEC, 2014a) and 2,313 billion cubic feet of natural gas in 2012 (CEC, 2012). Californians presently consume over 18 billion gallons of motor vehicle fuels per year (CEC, 2014b).

The proposed project's estimated motor vehicle fuel use is detailed in Table 5-2.

Total estimated energy usage, including motor vehicle fuel, calculated using CalEEMod and shown in CalEEMod output files in Appendix B, is summarized and compared to state-wide usage in Table 5-3. Final energy use is shown as a net increase over the energy use from the existing use of the project site. The proposed project would make a minimal contribution to state-wide energy consumption in these categories.

Table 5-2
Estimated Project-Related Annual Motor Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips[1]	Annual Vehicle Miles Traveled[2]	Average Fuel Economy (miles/gallon)[3]	Total Annual Fuel Consumption (gallons)
Existing				
Passenger Cars	51.45%	7,337,324	27.5	266,812
Light/Medium Trucks	44.45%	6,339,048	23.5	269,747
Heavy Trucks/Other	3.67%	523,381	7.7	67,972
Motorcycles	0.43%	61,381	50	1,228
Total	**100%**	**14,261,076**	**--**	**605,759**
With Project				
Passenger Cars	50.46%	16,660,171	27.5	605,824
Light/Medium Trucks	44.89%	14,821,146	23.5	630,687
Heavy Trucks/Other	4.22%	1,393,300	7.7	180,948
Motorcycles	0.43%	141,971	50	2,839
Total	**100%**	**33,016,588**	**--**	**1,420,298**
Net Change				
Passenger Cars		9,322,847	27.5	339,012
Light/Medium Trucks		8,482,098	23.5	360,940
Heavy Trucks/Other		869,919	7.7	112,976
Motorcycles		80,590	50	1,611
Total Net Change		**18,755,512**	**--**	**814,539**

[1] Percent of vehicle trips found in Table 4.3 "Trip Type Information" in CalEEMod output (see Appendix B)
[2] Mitigated annual VMT found in Table 4.2 "Trip Summary Information" in CalEEMod output (see Appendix B)
[3] Average fuel economy provided by the United States Department of Transportation, Bureau of Transportation Statistics (2010).

Table 5-3
Estimated Project-Related Energy Usage
Compared to State-Wide Energy Usage

Form of Energy	Units	Annual Project-Related Energy Use	Annual State-Wide Energy Use	Project % of State-Wide Energy Use
Existing				
Electricity	megawatts per hour	6,830[1]	296,628,000[2]	0.0002%
Natural Gas	billion BTU	5.69[1]	2,313,000[3]	0.000002%
Motor Vehicle Fuels	gallons	605,759[4]	18,019,000,000[5]	0.00003%
Proposed Project				
Electricity	megawatts per hour	10,637	296,628,000	0.00004%
Natural Gas	billion BTU	23.88	2,313,000	0.00001%
Motor Vehicle Fuels	gallons	1,420,298	18,019,000,000	0.00008%
Net Change				
Electricity	megawatts per hour	3,807	296,628,000	0.00001%
Natural Gas	billion BTU	18.19	2,313,000	0.000008%
Motor Vehicle Fuel	gallons	814,539	18,019,000,000	0.00005%

[1] CalEEMod output provided in the Air Quality Analysis (see Appendix C for calculation results); Table 5.2
[2] California Energy Commission, California Energy Almanac,2013 Total Electricity System Power, data as of September 2014. Available: http://energyalmanac.ca.gov/electricity/total_system_power.html
[3] California Energy Commission, California Energy Almanac, Overview of Natural Gas in California – Natural Gas Supply. Available: http://energyalmanac.ca.gov/naturalgas/overview.html
[4] See Table 5-2
[5] California Energy Commission, 2014 Integrated Energy Policy Report, Available: http://www.energy.ca.gov/2014publications/CEC-100-2014-001/CEC-100-2014-001-CMF.pdf.

The proposed project would also be subject to the energy conservation requirements of the California Energy Code (Title 24, Part 6, of the California Code of Regulations, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*) and the California Green Building Standards Code (Title 24, Part 11 of the California Code of Regulations). The California Energy Code provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California. The Code applies to the building envelope, space-conditioning systems, and water-heating and lighting systems of buildings and appliances. The Code provides guidance on construction techniques to maximize energy conservation. Minimum efficiency standards are given for a variety of building elements, including appliances; water and space heating and cooling equipment; and insulation for doors, pipes, walls and ceilings. The Code emphasizes saving energy at peak periods and seasons, and improving the quality of installation of energy efficiency measures. The California Green Building Standards Code sets targets for: energy efficiency; water consumption; dual plumbing systems for potable and recyclable water; diversion of construction waste from landfills, and use of environmentally sensitive materials in construction and design, including ecofriendly flooring, carpeting, paint, coatings, thermal insulation, and acoustical wall and ceiling panels.

The project is required to exceed Title 24 standards that are in effect at the time of development by 20 percent and to achieve a 25 percent reduction in electricity use through such measures as photovoltaic cells in compliance with Downtown Area Plan EIR Mitigation Measure AQ-2. Exceedance of Title 24 energy conservation requirements would ensure that energy is not used in an inefficient, wasteful, or unnecessary manner.

5.4 PUBLIC HEALTH HAZARDS

An SEIR scoping meeting was held on April 30, 2015 to solicit further public comment on the scope and content of the SEIR. One commenter expressed concern that the project's proposed demolition could result in vermin from the existing buildings invading adjacent properties. Demolition could potentially disturb vermin in existing buildings, which, if substantial, could pose a public health hazard. The commenter suggested mitigation requiring existing buildings to be fumigated prior to demolition.

Mitigation Measures. The following mitigation measure would reduce potential public health impacts from vermin due to proposed demolition to a less than significant level.

Other-1 **Fumigation.** Prior to issuance of demolition permits, the project applicant shall fumigate all buildings.

Significance After Mitigation. Implementation of Mitigation Measure Other-1 would reduce impacts to a less than significant level.

6 ALTERNATIVES

As required by Section 15126.6 of the *CEQA Guidelines*, this SEIR examines a range of reasonable alternatives to the proposed project that would attain most of its basic objectives (stated in Section 2.5 of this SEIR) but would avoid or substantially lessen any of its significant effects.

The key objectives of the project are to:

- *Replace seismically deficient City Hall and Main Library in an expeditious manner.*
- *Reduce public safety hazards by eliminating the risk of fire, structural collapse, personal injury to trespassers, vandalism and crime, by demolishing the structurally unsound, abandoned, and deteriorated former Long Beach Courthouse building.*
- *Meet the long term goal of the Harbor Department to bring its headquarters downtown.*
- *Redevelop the Civic Center mega-block into a vibrant mix of public and private space, including a grand Civic Plaza, which asserts the value and importance of the public realm, and which functions as the City's center for governance, civic engagement and cultural and educational exchange.*
- *Consider opportunities to redevelop Old Courthouse site with public uses as part of the Civic Center mega-block redevelopment.*
- *Improve connections between the new Civic Center and greater Downtown through the reestablishment of the small block grid of the historic downtown street fabric and encouragement of a more pedestrian friendly environment.*
- *Redevelop the Main Library within Lincoln Park and ensure that future library space needs will be considered in the context of the changing role of the modern city library, and revolutionary change in media and technology that will influence the library of the future.*
- *Revitalize Lincoln Park into a destination park with amenities appropriate for visitors, residents and Downtown workers.*
- *Cap the City's ongoing maintenance costs, increase energy efficiency, and consolidate offsite City leases, when feasible.*
- *Consider private development elements and/or disposition of surplus property for private development, such as new housing, office, hotel and retail. If housing is proposed, 10 percent of all housing units must be affordable to moderate income persons.*
- *Design buildings to interface with the streets and draw pedestrians into the civic spaces. Proposed solutions must address the vision, guiding principles and design guidelines of the Downtown Plan 2012 (see Planned Development District Ordinance PD-30).*
- *Connect the Civic Center to surrounding business and residential uses. Be highly accessible to pedestrians and bicycles and include convenient automobile access. All private uses should complement the civic functions.*
- *Activate the perimeter streetscape, access points and all public components. Provide appropriate lighting and wayfinding signage for pedestrians, bicycles and automobiles.*

The guiding principles for downtown Long Beach from the Downtown Plan are as follows:

- *We promote the development of a distinctive downtown skyline, providing a vibrant, compact city core attracting cosmopolitan and creative people.*
- *Our lively Downtown acts as the heart of the city, connecting with the neighborhoods and coastline.*

- *We encourage an infrastructure to accommodate a future that is less dependent on fossil fuels and more focused on walking, bicycling, and public transportation.*
- *We invite and support new industries to invest in our future so that we can continue to diversify our economy and promote job growth while strengthening our existing backbone of convention, tourism, and port business.*
- *We endorse bold architecture, planning, and construction that utilize green building technology and incorporate sustainable energy.*
- *We demand quality in building practices in order to ultimately create historical masterpieces.*
- *We value our buildings of historic merit and seek to preserve or restore them through adaptive reuse.*

Included in this analysis are four alternatives, including the CEQA-required "no project" alternative, that involve changes to the project to help reduce its environmental impacts as identified in this SEIR. This section also identifies the Environmentally Superior Alternative.

The following alternatives are evaluated in this SEIR:

- *Alternative 1: No Project*
- *Alternative 2: Downtown Plan Buildout of Civic Center Area*
- *Alternative 3: Adaptive Reuse Alternative*
- *Alternative 4: Reduced Density*

The potential environmental impacts of each alternative are analyzed in Sections 6.1 through 6.4.

Table 6-1 provides a summary comparison of the development characteristics of the proposed project and each of the alternatives considered. A more detailed description of the alternatives is included in the impact analysis for each alternative.

Table 6-1
Comparison of Project Alternatives' Buildout Characteristics

Characteristic	Alternatives				
	Proposed Project	**No Project Alternative**	**Downtown Plan Buildout of Civic Center Area[1]**	**Adaptive Reuse Alternative**	**Reduced Density[4]**
Number of Residential Units	780 DU	None	800 DU	780 DU	741 DU
Number of Hotel Rooms	200 rooms	None	None	200 rooms	190 rooms
Office Square Footage	510,000 GSF	283,000 GSF	460,000 GSF	510,000GSF[2]	484,500 GSF
Commercial Square Footage: Retail: Restaurant:	 32,000 GSF 8,000 GSF	None	 64,000 GSF 16,000 GSF	 32,000 GSF 8,000 GSF	 30,400 GSF 7,600 GSF
Lincoln Park and Main Library *Total Park Area:* *Open Space (ac):* *Library (ac/GSF):*	 4.8 ac 3.17 ac 1.63 ac / 92,000 GSF[3]	 4.8 ac 2.6 ac 2.2 ac / 138,000 GSF[3]	 4.8 ac 2.6 ac 2.2 ac / 138,000 GSF[3]	 4.8 ac 3.17 ac 1.63 ac / 92,000 GSF[3]	 4.8 ac 3.17 ac 1.63 ac / 87,400 GSF[3]
Vacant Square Footage (former Long Beach Courthouse)	None	277,000 GSF	None	None	None
Grading Import: Export:	 68,200 cy 380,000 cy	None	 11,200 cy 350,000 cy	 68,200 cy 200,000 cy	 68,200 cy 380,000 cy
Construction Schedule	74 months	None	69 months[6]	74 months	71 months[5]

DU = dwelling units; ac = acres; GSF: gross square footage; cy = cubic yards
[1] Source: Iteris, Long Beach Downtown Community Plan EIR Traffic Impact Analysis, 2010. Assumes that the existing Lincoln Park and the Library would be retained.
[2] Although the entire Courthouse would be used as City Hall, only approximately 180,000 GSF of the Courthouse would be useable as office space (RRM Design Group, 2014; see Appendix H of the Long Beach Courthouse Demolition Project Draft EIR). Therefore, it is assumed that the Port Building would be approximately 330,000 GSF and would accommodate City Hall and Port Building uses to accommodate all uses proposed by the project.
[3] GSF for Library uses.
[4] Assumes five percent reduction in residential, commercial, and office/Library uses.
[5] Estimated by reducing the proposed project's building construction schedule by five percent. The Reduced Density Alternative would include the same demolition, grading, and paving schedule.
[6] Eliminated Phase 3, which includes Main Library demolition and park construction.

All of these alternatives are described and analyzed below. Following the analysis of these four alternatives is a discussion of alternatives that were considered for analysis, but rejected as infeasible. These include several alternatives suggested by the State Historic Preservation Officer of the Office of Historic Preservation, as part of the SEIR scoping process. In addition, this section includes a discussion of the "environmentally superior alternative" among the alternatives studied.

6.1 NO PROJECT ALTERNATIVE

This alternative assumes that the proposed project is not constructed on the site. It assumes that the site would continue in its current condition and that the existing City Hall, Main Library, Lincoln Park, vacant former Long Beach Courthouse, and associated parking structures and parking lots would remain. However, implementation of the no project alternative at this time

would not preclude development of the site at some point in the future. The No Project Alternative is required by CEQA and also suggested by the Office of Historic Preservation during the SEIR scoping process.

6.1.1 Impact Analysis

No change in environmental conditions would occur under this alternative because no development would occur and site conditions would not change. This alternative would avoid the proposed project's significant and unavoidable impacts related to operational air pollutant emissions; exposing sensitive receptors to toxic air contaminants from Port of Long Beach and offsite stationary sources; demolishing historic resources; construction noise and vibration; and cumulative air quality impacts. In addition, this alternative would avoid significant, but mitigable impacts related to construction air pollutant emissions, operational noise, and exposing sensitive receptors to excessive noise. No significant impacts would occur under this alternative and none of the mitigation measures recommended for the proposed project would apply.

This alternative would not include demolition or rehabilitation of the former Long Beach Courthouse. Consequently, the critical functional and physical deficiencies identified for the former Courthouse by the statewide Task Force on Court Facilities in 1997 and the Administrative Office of the Courts in 2001 would remain. These deficiencies are described in detail in Section 2.0, *Project Description*, but include Americans with Disabilities Act (ADA) accessibility issues and seismic deficiencies. Despite a limited retrofit at an estimated cost of $13.9 million by the County of Los Angeles, the Courthouse is expected to remain standing long enough to evacuate, but would not be capable of being re-occupied following a medium-sized earthquake. Under this alternative, the structurally unsound, abandoned, and deteriorated former Courthouse would remain a public safety hazard, vulnerable to risk of fire, structural collapse, personal injury to trespassers, and vandalism and crime.

Overall, this alternative's impacts would be less than those of the proposed project. However, the selection of the no project alternative would not preclude the future redevelopment of the Civic Center area. Furthermore, this alternative would not fulfill any of the project objectives, nor would it meet the Downtown Plan guiding principles for the Downtown Plan Area.

6.2 DOWNTOWN PLAN BUILDOUT OF CIVIC CENTER AREA ALTERNATIVE

The Downtown Plan EIR assumed development of up to 800 residential units, 460,000 gross square feet (GSF) of office/commercial floor area, 64,000 GSF of retail space and 16,000 GSF of restaurant uses for the Civic Center area in the Downtown Plan traffic analysis. This alternative assumes the existing Main Library and Lincoln Park would be retained and Lincoln Parking Garage would not be renovated. In addition, this alternative does not include the construction of a hotel. As the existing Library and Lincoln Park would be retained, grading would be reduced in comparison to the proposed project to 11,200 cy of import and 350,000 cy of export and the construction schedule would likely be reduced to 69 months. Similar to the proposed project, this alternative would include demolition of the former Courthouse and City Hall.

6.2.1 Aesthetics

Similar to the proposed project, the Downtown Plan Buildout of the Civic Center Area Alternative would introduce new high-rise structures and full-block complexes at locations within the Downtown Plan Area. The alternative would increase the number of residential units and the commercial area constructed on the project site, but would generally be similar in regards to the visual character of the proposed development. As this alternative would not include the hotel component, it would likely not increase the height of the two Center Block mixed-use buildings proposed by the project despite the additional residential and commercial area this alternative would accommodate and the site constraints caused by retaining the existing Main Library. The aesthetic impact to scenic vistas, scenic resources, and the site's visual character associated with this development would be similar to that of the proposed project and would be less than significant. Implementation of this alternative would result in a roughly similar significant, but mitigable aesthetic impact from construction when compared to the proposed project, as it would occur over the same period of time and in the same general locations as the proposed project. Therefore, Mitigation Measure AES-1 (Construction Screening) would be required to screen construction sites from public viewpoints. Shadows or shading could be generated by this alternative that would affect shadow-sensitive land uses; however, because this alternative does not include the hotel component, this alternative would not create new significant shading impacts to shadow-sensitive land uses. Overall, impacts from this alternative would be similar to those of the proposed project.

6.2.2 Air Quality

The Downtown Plan Buildout of Civic Center Area Alternative would not include a 200-room hotel component, but would increase the number of residential units and the commercial area constructed on the project site; therefore, this alternative would likely have similar operational emissions as the proposed project. As this alternative would retain the existing Main Library and Lincoln Park, soil import and export would be reduced by approximately seven percent in comparison to the proposed project. Therefore, this alternative would have slightly lower overall construction emissions than the proposed project.

Similar to the proposed project, this alternative would include demolition of existing buildings and would require implementation of Mitigation Measure AQ-2 (Air Quality Safety Plan). As this alternative would have similar operational emissions compared to the proposed project, it would also require implementation of Mitigation Measure AQ-3 (Low-VOC Paint). Nonetheless, similar to the proposed project, this alternative's operational and cumulative air quality impacts would remain significant and unavoidable. In addition, this alternative would place sensitive receptors in the Downtown Plan Area like the proposed project; therefore, impacts related to toxic air contaminants from Port of Long Beach and offsite stationary sources would remain significant and unavoidable.

6.2.3 Cultural Resources

Like the proposed project, the Downtown Plan Buildout of Civic Center Area Alternative would include the demolition of the former Courthouse and City Hall, but would retain the existing Main Library; therefore, this alternative's impact would be less than that of the proposed project, but would still be significant. As with the proposed project, Mitigation Measures CR-

1(a) (Historic Artifact Collection Program) and CR-1(b) (Building Documentation) would apply to this alternative, but would not reduce the impact to below a level of significance. This alternative's cultural resource impact would be less than that of the proposed project because it would retain the Main Library, but would be significant and unavoidable, as determined in the Downtown Plan EIR.

6.2.4 Greenhouse Gas Emissions/Climate Change

The Downtown Plan Buildout of Civic Center Area Alternative would not include a 200-room hotel component, but would increase the number of residential units and the commercial area constructed on the project site; therefore, this alternative would have similar operational greenhouse gas (GHG) emissions as the proposed project. Similar to the proposed project, this alternative's GHG emissions and climate change impacts would be less than significant. Similar to the proposed project, this alternative would be consistent with the Climate Action Team GHG reduction strategies, the SCAG Sustainable Communities Strategy, and Long Beach Sustainable City Action Plan Goals.

6.2.5 Noise and Vibration

The Downtown Plan Buildout of Civic Center Area Alternative would increase the number of residential units proposed by 20 units and the commercial area constructed on the project site by 40,000 GSF. Construction would likely occur over a shorter period of time (69 months) when compared to the proposed project. Nonetheless, due to the project site's proximity to sensitive receptors Mitigation Measure Noise-1 (Noise Control Plan) would be required. As with the proposed project, this alternative would have significant and unavoidable noise and vibration impacts due to the demolition of the former Long Beach Courthouse and City Hall. However, noise and vibration impacts would be slightly reduced because this alternative would not include demolition of the Main Library. Operational impacts associated with location of commercial uses in proximity to existing and planned residential uses would be similar to those of the proposed project and Mitigation Measures Noise-2(a) (Loading Areas) and Noise-2(b) (Sound-Rated Windows and Sliding Glass Doors Near Commercial Uses) would apply to this alternative.

As described in detail in Section 6.2.6, this alternative would generate an estimated 3,181 more daily trips, 39 more a.m. peak hour trips, and 288 more p.m. peak hour trips when compared to the proposed project. This represents an approximately 23 percent increase in daily traffic compared to the proposed project.

The proposed project's traffic noise impacts would not exceed the 3 dBA significance threshold at any receptor location. However, the 23 percent increase in traffic due to this alternative may result in an exceedance of the relevant thresholds at certain locations. The receptor located at Chestnut Avenue between Third Street and Broadway would experience a noise increase of 2.5 dBA as a result of the proposed project and this alternative would likely result in an exceedance of the 3 dBA significance threshold at this location.

The Downtown Plan Buildout of Civic Center Area Alternative's impacts related to construction-generated noise and vibration would be less than those of the proposed project, however impacts related to traffic-generated noise would be greater. Overall, construction noise and vibration impacts would continue to be significant and unavoidable.

6.2.6 Transportation and Traffic

Table 6-2 shows the trip generation potential for the mix of uses assumed for buildout of the Civic Center. Buildout of the Downtown Plan Civic Center Area would generate an estimated 14,104 daily trips, with 710 trips (337 inbound, 373 outbound) produced in the a.m. peak hour, and 840 trips (439 inbound, 401 outbound) produced in the p.m. peak hour. A comparison of the trips generated by the proposed project to the trips generated by the mix of uses assumed in the Downtown Plan for the Civic Center area shows that that this alternative would result in 3,181 more daily trips, 39 more a.m. peak hour trips, and 288 more p.m. peak hour trips.

Table 6-2
Trip Generation Forecast – Downtown Plan Civic Center Area

ITE Reference	Average Daily Trips	A.M. Peak Hour			P.M. Peak Hour		
		Inbound	Outbound	Total	Inbound	Outbound	Total
LU Zone 8: Residential Condos	1,769	16	81	97	78	37	115
LU Zone 9:Residential Condos, Office, Shopping Center, Restaurant	15,229	607	332	939	411	606	1,017
Total Downtown Plan Civic Center Area Trips	**16,998**	**623**	**413**	**1,036**	**489**	**643**	**1,132**
Existing City Hall Trips[a]	**2,894**	**286**	**40**	**326**	**50**	**242**	**292**
Net Downtown Plan Civic Center Area Alternative Trips (Alternative – Existing)	**14,104**	**337**	**373**	**710**	**439**	**401**	**840**

Source: Linscott, Law and Greenspan June 2015; see Appendix E for full TIA report.
[a] *The Downtown Plan Buildout of the Civic Center Area Alternative would include demolition of City Hall.*

The Downtown Plan EIR determined that traffic generated by buildout of the Downtown Plan would result in significant and unavoidable impacts to traffic and transportation. This alternative would contribute to this impact and impacts would be greater than those of the proposed project.

6.3 ADAPTIVE REUSE ALTERNATIVE

This alternative considers the potential impacts of rehabilitating the former Long Beach Courthouse to be adaptively reused primarily as City Hall and/or municipal offices. This alternative responds to requests from the California Office of Historic Preservation and others during the SEIR scoping process to consider an alternative that would preserve existing onsite historic resources. This alternative also considers the demolition of the City Hall-Library Complex to occur by means other than implosion.

The Adaptive Reuse Alternative assumes the former Courthouse building would be rehabilitated for a government office use in conformance with the Secretary of the Interior Standards for the Treatment of Historic Properties. Rehabilitation of the building would be conducted in accordance with the California Historic Building Code, which allows for more flexible application of building regulations when impacting a historic resource. It is assumed that all identified character-defining features of the Courthouse building interior would be repaired and maintained in-situ to the highest degree feasible and in accordance with the

Secretary's Rehabilitation Standards and Guidelines. Nonetheless, the majority of these spaces would be altered to accommodate government office uses.

RRM Design Group conducted a conceptual feasibility study assessment to re-purpose the former Courthouse building for a government office use. That study is included in Appendix H of the Long Beach Courthouse Demolition Project Draft EIR. In summary, the assessment concludes that the building would require substantial upgrades to the building's structural, mechanical, plumbing, fire protection, lighting and electrical systems. All levels of the building's interior would require substantial modernization to comply with the California's building codes, energy efficiency regulations and disabled access for a government office use. Virtually all of the exterior glass panels and metal building skin would need to be replaced with dual glazed high efficiency glass to meet current energy regulations. Similarly, to meet disabled access regulations several upgrades to the building entries, lobby, circulation, parking, and restrooms would require substantial renovation. While the gross building area is approximately 277,000 square feet, the net useable area for office conversion would be much less. The estimated usable office area would be in the 60 to 70 percent range or approximately 180,000 square feet; therefore, it is assumed that the Port Building would be approximately 330,000 GSF (rather than 240,000 GSF proposed by the project) and would accommodate City Hall and Port Building uses. Therefore, this alternative would reduce new office square footage construction by approximately 35 percent, when compared to the proposed project.

The conceptual feasibility study determined that substantial investment would be required to modernize the existing building systems and to renovate interior finish materials. Renovation projects are labor intense for activities such as selective demolition and preservation of character defining features. The cost premium for a public sector renovation project may add upwards of 25 to 30 percent beyond the cost of new construction to account for prevailing wage requirements, which are not applicable to private sector projects. Renovation budget contingencies would also be much higher than new construction due to the likelihood of finding unknown deficiencies such as hazardous material abatement. Major cost factors include significant renovation of all major building systems. Seismic strengthening of the existing building structural systems is needed to remain habitable after a seismic event. According to the conceptual feasibility study, a renovation project of this size and complexity would cost far more than demolishing and replacing the existing building with entirely new construction; the study estimated that the cost for the rehabilitation of the former Courthouse and conversion to municipal office use would range from $124,650,000 to $138,500,000.

6.3.1 Aesthetics

The Adaptive Reuse Alternative would involve the same amount of residential and commercial space as the proposed project. This alternative would result in the reconstruction of the former Long Beach Courthouse to be used as 180,000 GSF of useable office space. This alternative would increase the size of the Port Building to 330,000 GSF to accommodate the office space needs of City Hall and the Harbor Department; therefore, the Port Building would be four stories taller than the proposed project and would be approximately 15 stories tall.

Adaptive reuse of the former Courthouse may contribute less to the visual character of the area than the proposed project, which would introduce new structures that are more visually consistent with the surrounding area and that would be visually compatible with one another.

Overall, this alternative would result in a change in visual character similar to that of the proposed project and the aesthetic impact to scenic vistas, scenic resources, and the site's visual character associated with this development would also be less than significant. Implementation of this alternative would result in a roughly similar significant, but mitigable impact from construction when compared to the proposed project, as construction would occur over the same period of time and in the same general locations as under the proposed project. Therefore, Mitigation Measure AES-1 (Construction Screening) would be required to screen construction sites from public viewpoints. Construction impacts associated with the demolition of the former Long Beach Courthouse would not occur, but other construction impacts would occur throughout the project site. Although the Port Building would be four stories taller than the proposed project, shadows or shading generated by this alternative would not create new shadow impacts to shadow-sensitive land uses. Overall, impacts from this alternative would be similar to those of the proposed project.

6.3.2 Air Quality

The Adaptive Reuse Alternative would involve the same amount of residential and commercial space as the proposed project. This alternative would result in the reconstruction of the former Long Beach Courthouse to be used as 180,000 GSF of office space. This alternative would build 330,000 GSF of new office space to accommodate City Hall and the Harbor Department's office space needs. Therefore, this alternative would reduce new office square footage construction by approximately 35 percent, when compared to the proposed project.

Construction would occur over the same length of time as compared to the proposed project and in the same locations. This alternative would result in the same operational emissions compared to the proposed project due to the same amount of overall residential, commercial, and office uses. This alternative would have lower overall construction emissions because demolition of the former Long Beach Courthouse would not occur and the square footage of new office construction would be reduced by approximately 35 percent. Similar to the proposed project, construction-related air quality impacts would be less than significant with implementation of Mitigation Measure AQ-2 (Air Quality Safety Plan), which would mitigate impacts related to the demolition of the City Hall-Library Complex. Because this alternative would include the same overall residential, commercial, and office uses as the proposed project, implementation of Mitigation Measure AQ-3 (Low-VOC Paint) would also be required and the impact of operational air pollutant emissions would remain significant and unavoidable, similar to the proposed project. This alternative's air quality impacts would be similar to that of the proposed project; operational and cumulative air quality impacts would remain significant and unavoidable. Similar to the proposed project, this alternative would place sensitive receptors in the Downtown Plan Area; therefore, impacts related to toxic air contaminants from Port of Long Beach and offsite stationary sources would also remain significant and unavoidable.

6.3.3 Cultural Resources

The former Long Beach Courthouse building was found individually eligible for the California Register of Historic Resources and also eligible for City of Long Beach Landmark Designation. This alternative would preserve this building and eliminate the significant and unavoidable impact resulting from demolition of the building. The adaptive reuse of the building, however, would require substantial alteration of interior and exterior features. The adaptive reuse would

maintain the structure of the building, but its appearance and historic value may be diminished. Similar to the proposed project, the Adaptive Reuse Alternative would include demolition of the City Hall-Library Complex; therefore, similar to the proposed project, this alternative would have a significant impact to this resource and Mitigation Measures CR-1(a) (Historic Artifact Collection Program) and CR-1(b) (Building Documentation) would apply. This alternative's cultural resource impact would be less than that of the proposed project with respect to the former Long Beach Courthouse and equal to that of the proposed project with respect to the City Hall-Library Complex. Therefore, although the impact would be lower than that of the proposed project, the impact associated with demolition of the City Hall-Library Complex would remain significant and unavoidable.

6.3.4 Greenhouse Gas Emissions/Climate Change

The Adaptive Reuse Alternative would include the same amount of office, residential, and commercial uses on the project site; therefore, operational GHG emissions would be the same as the proposed project. This alternative would have slightly lower construction GHG emissions than the proposed project due to the adaptive reuse of the former Long Beach Courthouse, rather than the demolition of the building. This alternative's climate change impacts would be slightly less than those of the proposed project and would remain less than significant. Similar to the proposed project, this alternative would be consistent with the Climate Action Team GHG reduction strategies, the SCAG Sustainable Communities Strategy, and Long Beach Sustainable City Action Plan Goals.

6.3.5 Noise and Vibration

Construction would occur over the same length of time as compared to the proposed project and in the same locations. However, the significant and unavoidable impacts associated with noise and vibration generated by the demolition of the former Long Beach Courthouse would not occur under this alternative, nor would the significant and unavoidable impacts associated with noise and vibration generated by the potential demolition by implosion of the City Hall-Library Complex. The significant and unavoidable impact associated with noise generated by other construction activities, such as from the use of jackhammers, generators, and compactors, would, however, occur. Operational impacts associated with location of commercial uses in proximity to existing and planned residential uses would be similar to those of the proposed project and mitigation measures Noise-2(a) (Loading Areas) and Noise-2(b) (Sound-Rated Windows and Glass Doors Near Commercial Uses) would apply to this alternative.

As described in detail in Section 6.3.6, this alternative would have similar traffic volumes as the proposed project because it would not change the office, commercial, and residential square footages of the proposed project. Therefore, similar to the proposed project, traffic noise impacts would be less than significant.

6.3.6 Transportation and Traffic

This alternative would have generally the same traffic volumes as the proposed project because it would not change the office, commercial, and residential square footages of the proposed project. Access to the project site would be similar to the proposed project, and would not include any hazardous design features. Similar to the proposed project, impacts to traffic would be less than significant.

6.4 REDUCED DENSITY

This alternative involves reducing the amount of residential, commercial, and office/library uses proposed for the project site by five percent. Therefore, this alternative assumes the construction of 741 dwelling units, a 190 room hotel, 484,500 GSF of office uses, 30,400 GSF of retail uses, 7,600 GSF of restaurant uses, and 87,400 GSF of library uses. It is assumed that the footprint of proposed land uses would remain the same; therefore, this alternative would utilize 3.17 acres of Lincoln Park as open space and would have the same overall grading as the proposed project. The construction schedule would be shorter than the proposed project and would occur over approximately 71 months.

The intent of this alternative is to reduce any potentially significant impacts associated with the project that would result from its intensity, such as the potentially significant but mitigable impacts mentioned above. This alternative also has the potential to reduce other, less than significant impacts of the proposed project such as aesthetics, GHGs, traffic and roadway noise. This alternative would meet the objectives of the project, but to a lesser degree than the project, because it would not involve the same amount of housing or office/library and commercial space creation as the proposed project.

6.4.1 Aesthetics

The Reduced Density Alternative would lead to a reduced amount of residential, office, and commercial space being built on the project site as compared to the proposed project. While this alternative would result in a change in visual character similar to that the proposed project since commercial, office, and residential uses would be developed throughout the area, buildings would be slightly smaller with slightly less visual impact. The aesthetic impact to scenic vistas, scenic resources, and the site's visual character associated with this development would be reduced when compared to the proposed project. Implementation of this alternative would result in a roughly similar, but slightly reduced significant but mitigable impact associated with construction when compared to the proposed project since it would occur in the same general locations as the proposed project over a shorter period of time. Mitigation Measure AES-1 (Construction Screening) would be required to screen construction sites from public viewpoints. Shadows or shading generated by this alternative would be slightly reduced compared to the proposed project because building heights would be lower. Similar to the proposed project, this alternative would have less than significant shadow impacts. Overall, impacts from this alternative would be slightly less than those of the proposed project and would be significant, but mitigable.

6.4.2 Air Quality

The Reduced Density Alternative involves a five percent reduction in overall development intensity as compared to the proposed project. This alternative would have slightly lower overall construction emissions than the proposed project due to the reduced number of units and square footage to be built, but grading emissions would not change substantially because this alternative would require the same grading as the proposed project. Because this alternative would include demolition of existing buildings, it would require implementation of Mitigation Measure AQ-2 (Air Quality Safety Plan). Table 6-3 shows that with implementation of Mitigation Measure AQ-3 (Low-VOC Paint), this alternative would result in operational

emissions of reactive organic gases (ROG) that are less than SCAQMD's significance threshold. The proposed project had significant, but mitigable construction-related air quality impacts and significant and unavoidable operational air quality impacts. This alternative's operational and construction-related air quality impacts would be less than those of the proposed project and both impacts would be less than significant with mitigation. Similar to the proposed project, however, this alternative would place sensitive receptors in the Downtown Plan Area; therefore, impacts related to toxic air contaminants from Port of Long Beach and offsite stationary sources would remain significant and unavoidable.

Table 6-3
Long-Term Operational Emissions (lbs/day) with Mitigation Measure AQ-3

Emission Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Reduced Density Alternative Emissions						
Area	**54.8**	0.7	61.2	<0.1	0.3	0.3
Energy	**0.7**	7.1	4.8	<0.1	0.6	0.6
Mobile	**50.5**	130.6	560.5	1.8	127	35.5
Total Project Emissions	**105.9**	**138.4**	**626.9**	**1.8**	**128.0**	**36.4**
Existing Emissions						
Area	18.2	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	0.2	1.5	1.3	<0.1	0.1	0.1
Mobile	35.0	78.5	323.7	0.6	55.3	15.7
Total Existing Emissions	**53.4**	**80.1**	**325.1**	**0.6**	**55.4**	**15.8**
Net Emissions (Project – Existing)	***52.5***	***58.3***	***301.8***	***1.2***	***72.6***	***20.6***
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	*No*	*No*	*No*	*No*	*No*	*No*

Source: See Appendix B for CalEEMod calculations. Assumed compliance with SCAQMD's Healthy Hearths Initiative Rule 445 and Architectural Coating Rule 1113,and Downtown Plan EIR Mitigation Measure AQ-2 and GHG-2(b).
Note: Totals may not add up due to rounding.

6.4.3 Cultural Resources

Like the proposed project, the Reduced Density Alternative would include the demolition of the former Courthouse and City Hall-Library Complex; therefore, this alternative's cultural resource impact would be similar to that of the proposed project and would be significant. Mitigation Measures CR-1(a) (Historic Artifact Collection Program) and CR-1(b) (Building Documentation) would apply to this alternative and would reduce impacts to the degree

feasible. Nevertheless, as with the proposed project, the impact would remain significant and unavoidable due to the demolition of historic resources.

6.4.4 Greenhouse Gas Emissions/Climate Change

Because of the five percent reduction in the total development under the Reduced Density Alternative, this alternative would lead to a roughly five percent reduction in operational GHG emissions compared to the proposed project. A minor reduction in overall construction-related GHG emissions would also occur, although grading GHG emissions would not be substantially reduced because this alternative would require the same grading as the proposed project. Similar to the proposed project, this alternative would be consistent with the Climate Action Team GHG reduction strategies, the SCAG Sustainable Communities Strategy, and Long Beach Sustainable City Action Plan Goals. The Reduced Density Alternative's GHG Emissions/Climate Change impacts would be less than the already less than significant impacts of the proposed project.

6.4.5 Noise and Vibration

The Reduced Density Alternative would reduce the amount of residential, office, and commercial space by five percent compared to the proposed project. Construction would occur over approximately 71 months, a three month reduction compared to the proposed project, thereby reducing the duration of the significant and unavoidable noise and vibration impacts generated near existing sensitive receptors. This alternative would have the same significant and unavoidable impacts related to noise and vibration due to the demolition of the former Long Beach Courthouse and City Hall-Library Complex and Mitigation Measure Noise-1 (Noise Control Plan) would be required. Operational impacts associated with the location of commercial uses in proximity to existing and planned residential uses would be similar to the proposed project and mitigation measures Noise-2(a) (Loading Areas) and Noise-2(b) (Sound-Rated Windows and Glass Doors Near Commercial Uses) would apply to this alternative. Similar to the proposed project, the operational noise impacts of this alternative would be less than significant.

As described in detail in Section 6.4.6, this alternative would result in a five percent reduction in traffic generation when compared to the proposed project. The impacts of project-related traffic noise would be less than significant and this alternative would result in less traffic-generated noise. Therefore, this alternative's impacts related to noise and vibration would be less than significant.

6.4.6 Transportation and Traffic

The Reduced Density Alternative would reduce project-generated traffic by five percent. The impacts of project-related traffic would be less than significant; therefore, because the Reduced Density Alternative would generate five percent fewer new trips, its impact would also be less than significant. Access to the project site would be similar to the proposed project, and would not include any hazardous design features; therefore, transportation impacts related to hazardous design features would also be less than significant.

6.5 ALTERNATIVES CONSIDERED BUT REJECTED

During the preparation of this SEIR, consideration was given to three alternatives that were suggested by the Office of Historic Preservation, as part of the SEIR scoping process, but were ultimately rejected. The three alternatives that were considered but rejected are an Alternate Site Alternative, an Infill Alternative, and an Alternative-Use Alternative. An Alternate Site Alternative and Infill Alternative would have located the entire proposed project or project components on one or more different sites within the Downtown Plan Area and an Alternative-Use Alternative would have placed different uses within the existing buildings on the project site. A fourth alternative, the Courthouse Adaptive Reuse and City Hall-Library Complex Rehabilitation Alternative, was considered, but rejected. This alternative would have adaptively reused the Courthouse as office space (similar to that described in the Adaptive Reuse Alternative above) and rehabilitated the seismic deficiencies within the City Hall-Library Complex.

The project includes a new City Hall, a new Port Building for Harbor Department administration, a new and relocated Main Library, a redeveloped Lincoln Park, residential development, and commercial mixed use development. In total, the proposed project includes six new buildings, three new parking garages, related infrastructure and landscaping, and two new public street extensions of Chestnut Avenue and Cedar Avenue through the project site. Existing buildings that would be demolished include the former Long Beach Courthouse and the City Hall-Library Complex. Moving the project to another site, as would occur in the Alternate Site and Infill Alternatives, would not meet many of the key project objectives since it would not replace seismically deficient structures, reduce public safety hazards, or improve and revitalize the Civic Center Area. In addition, it would not be feasible to place different uses in existing buildings on the project site, as would occur in the Alternate-Use Alternative, since additional buildings would need to be constructed to house displaced civic uses. Displaced civic uses then would not be located within the Civic Center Area, as identified in the adopted Downtown Plan.

The Courthouse Adaptive Reuse and City Hall-Library Complex Rehabilitation Alternative was also considered, but rejected. This alternative would have adaptively reused the Courthouse as office space (similar to that described in Section 6.3, *Adaptive Reuse Alternative*) and rehabilitated the seismic deficiencies within the City Hall-Library Complex. Unlike the Adaptive Reuse Alternative described in Section 6.3, *Adaptive Reuse Alternative*, this alternative would have placed the Port Building within the former Courthouse and retained the City Hall and Library uses within the existing buildings. This alternative was rejected because, as discussed in Section 2.0, *Project Description*, there are critical functional and physical deficiencies identified for the former Courthouse by the statewide Task Force on Court Facilities in 1997 and the Administrative Office of the Courts in 2001 that would make rehabilitation of the former Courthouse, infeasible. RRM Design Group prepared an Adaptive Reuse Study for the former Long Beach Courthouse in September 2014 that determined adaptive reuse of the former Courthouse would require substantial upgrades to the building's structural, mechanical, plumbing, fire protection, lighting and electrical systems. All levels of the building's interior would require substantial modernization to comply with the California's building codes, energy efficiency regulations and disabled access for a government office use. The Study estimated that costs for rehabilitation of the former Courthouse and conversion to municipal office use would range from $124,650,000 to $138,500,000. City Hall has seismic deficiencies that would increase

rehabilitation costs associated with the Courthouse. Moreover, the project site is largely built out; retaining the former Courthouse and the City Hall-Library Complex would restrict space available to achieve project objectives, such as redeveloping the site into a vibrant mix of public and private space with a grand Civic Plaza; improving connections with greater Downtown; reestablishing the small block grid of the historic downtown street fabric; private development of housing, office, hotel, and retail; and increasing affordable housing.

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmental analysis contained in the SEIR determined that the proposed project would result in several significant and unavoidable and potentially significant but mitigable environmental impacts. Each of the alternatives considered would reduce or avoid one or more of the proposed project's significant and unavoidable or significant but mitigable impacts, as discussed below.

The No Project Alternative would avoid or reduce the proposed project's potential impacts in all environmental impact areas and would have no environmental impact. Consequently, the No Project Alternative is considered environmentally superior. However, this alternative would not meet any of the project objectives (stated in Section 2.0, *Project Description*) because it would not carry out the proposed project, nor would it meet the Downtown Plan guiding principles for the Downtown Plan Area.

Section 15126.6(e)(2) of the *CEQA Guidelines* requires that, if the environmentally superior alternative is the No Project Alternative, the SEIR must also identify an environmentally superior alternative among the other alternatives. Of the remaining three alternatives, the Reduced Density Alternative, which would reduce the proposed project's potential impacts in aesthetics, air quality, GHG emissions, noise and vibration, and traffic and transportation, is the environmentally superior alternative. The only environmental impact areas for which impacts would not be reduced is cultural resources, for which the Reduced Density Alternative would have impacts similar to those of the proposed project. This alternative would meet the basic objectives of the project because it would allow for replacement of seismically deficient buildings, reduce public safety hazards, locate the Harbor Department headquarters in the Downtown Plan Area, redevelop the Civic Center mega-block, redevelop the former Courthouse, improve connections between the new Civic Center and greater Downtown, redevelop the Main Library, revitalize Lincoln Park, cap the City's ongoing maintenance costs, increase energy efficiency, provide affordable housing, connect to surrounding businesses and residential uses, and activate the perimeter streetscape. However, because the Reduced Density Alternative would involve a reduction in the total amount of residential, office, and commercial uses developed, it would meet the project objectives to a proportionally lesser degree than the proposed project.

The Adaptive Reuse Alternative would reduce, but would not eliminate impacts to cultural resources and would also incrementally lessen impacts to GHG emissions, and noise and vibration. The Adaptive Reuse Alternative would not fail to meet the project's objective of redeveloping the Civic Center mega-block into a vibrant mix of public and private space, including a grand Civic Plaza. As discussed in Section 6.3, *Adaptive Reuse Alternative*, it would also require substantial renovation at an estimated cost ranging from $124,650,000 to $138,500,000

Table 6-4 indicates whether each alternative's environmental impact is greater than, less than, or similar to the proposed project.

Table 6-4
Comparison of Environmental Impacts of Alternatives

Issue	No Project	Downtown Plan Buildout of Civic Center Area	Adaptive Reuse	Reduced Density
Aesthetics	-	=	=	-
Air Quality	-	=	=	-
Cultural Resources	-	-	-	=
GHG Emissions/ Climate Change	-	=	-	-
Noise and Vibration	-	- / +	- / +	-
Transportation and Traffic	-	+	=	-
Overall	**-**	**=**	**-**	**-**

+Impacts greater than those of the proposed project
- Impacts less than those of the proposed project
= Impacts similar impact to the proposed project
- / + Impacts both greater and less than the proposed project

7 REFERENCES AND REPORT PREPARERS

7.1 REFERENCES

7.1.1 Bibliography

American Cancer Society. *Cancer Facts and Figures* 2007. Available at: http://www.cancer.org/downloads/STT/CAFF2007PWSecured.pdf. Accessed on: July 2015.

Bay Area Air Quality Management District. *Updated CEQA Guidelines.* June 2010.

Bean, Walton. *California: An Interpretive History.* 1968.

Bean, Lowell John, and Charles R. Smith. *In California, Handbook of North American Indians.* 1978.

Bedrossian, Trinda L., Peter Roffers, Cheryl A. Hayhurst, Jeremy T. Lancaster, and William R. Short. *Geologic Compilation of Quaternary Surficial Deposits in Southern California.* 2012.

Blackburn, Thomas. *Ethnohistoric Descriptions of Gabrielino Material Culture*. 1963.

Bureau of Land Management (BLM). *Assessment of Mitigation of Potential Impacts to Paleontological Resources.* 2009. Available at: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-011.html. Accessed on: July 2015.

Byrd, Brian F., and L. Mark Raab. *Prehistory of the Southern Bight: Models for a New Millennium.* 2007.

California Air Districts. *CalEEMod User's Guide*. 2013. Available at: http://www.aqmd.gov/caleemod/user's-guide. Accessed on: July 2015.

California Air Resources Board (CARB). *Air Quality and Land Use Handbook: A Community Health Perspective.* 2005. Available at: http://www.arb.ca.gov/ch/handbook.pdf. Accessed on: July 2015.

CARB. *Greenhouse Gas Inventory Data – 2000 to 2011*. October 2011. Available at: http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed on: July 2015. Accessed on: July 2015.

CARB. *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the "LEV III" Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles*. December 2011.

Available at: http://www.arb.ca.gov/regact/2012/leviiighg2012/levisor.pdf. Accessed on: July 2015.

CARB. *Greenhouse Gas Inventory Data – 2000 to 2012 by Category as defined in the 2008 Scoping Plan*. March 2014. Available at: http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed on: July 2015.

CARB. Ambient Air Quality Standards. 2014. Available at: http://www.arb.ca.gov /research/aaqs/aaqs2.pdf. Accessed on: July 2015.

CARB. AB 32 Scoping Plan Website. June 2014. Available at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm Accessed on: July 2015.

California Air Pollution Control Officers Association (CAPCOA). CEQA & Climate Change. January 2008. Available at. http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf. Accessed on: July 2015.

California Energy Commission (CEC). *Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California: A Review of the Literature*. March 2009.

CEC. *Inventory Draft 2009 Biennial Report to the Governor and Legislature*. March 2009.

CEC. California Energy Almanac, Overview of Natural Gas in California – Natural Gas Supply. 2012. Available at: http://energyalmanac.ca.gov/naturalgas/overview.html. Accessed on: July 2015.

CEC. Energy Consumption Data Management System. Available at: www.ecdms.energy.ca.gov. Accessed July 2015.

CEC. California Energy Almanac, 2013 Total Electricity System Power. 2014a. Available at: http://energyalmanac.ca.gov/electricity/total_system_power.html. Accessed on: July 2015.

CEC. *Integrated Energy Policy Report.* 2014b. Available at: http://www.energy.ca.gov/2014publications/CEC-100-2014-001/CEC-100-2014-001-CMF.pdf. Accessed on: July 2015

California Climate Action Registry (CCAR) General Reporting Protocol, *Reporting Entity-Wide Greenhouse Gas Emissions*. January 2009.

California Climate Change Center (CCCC). *Climate Scenarios for California*. 2006.

CCCC. *The Impacts of Sea-Level Rise on the California Coast*. May 2009.

California Department of Finance (DOF). *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2014, with 2010 Benchmark*. 2014. Available at:

http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php. Accessed on: July 2015.

California Department of Transportation (CA DOT). November 2009. *Technical Noise Supplement.* Available at: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed on: June 2015.

CA DOT. California Scenic Highway Mapping System. 2015. Available at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed on: May 2015.

California Department of Water Resources (DWR). *Managing an Uncertain Future: Climate Change Adaption Strategies for California's Water*. October 2008. Available at: http://www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf. Accessed on: July 2015.

California Energy Commission. *Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California: A Review of the Literature*. March 2009. Available at: http://www.energy.ca.gov/2009publications/CEC-500-2009-038/CEC-500-2009-038-D.PDF. Accessed on: July 2015.

California Environmental Protection Agency (CalEPA). *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March 2006. Available at: http://www.climatechange.ca.gov/climate_action_team/reports/2006-04-03_FINAL_CAT_REPORT_EXECSUMMARY.PDF. Accessed on: July 2015.

CalEPA. *Climate Action Team Biennial Report*. April 2010.

California Natural Resources Agency. *California Climate Adaption Strategy.* 2009. Available at: http://www.energy.ca.gov/2010publications/CNRA-1000-2010-010/CNRA-1000-2010-010.PDF. Accessed on: July 2015.

California Natural Resources Agency. *2009 California Climate Adaption Strategy.* December 2009.

Dumke, Glenn S. *The Boom of the Eighties in Southern California*. 1944.

Engelhardt, Zephyrin, O.F.M. *San Fernando Rey, the Mission of the Valley.* 1927a.

Engelhardt, Zephyrin, O.F.M. *San Gabriel Mission and the Beginning of Los Angeles*. 1927b.

Erlandson, Jon M. *Early Maritime Adaptations on the Northern Channel Islands. In Hunter-Gatherers of Early Holocene Coastal California.* 1991.

Federal Highway Administration (FHWA), United States. February 2001. Keeping the Noise Down. Available at: http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.pdf. Accessed on: July 2015.

FHWA, United States. *Traffic Noise Model, Version 2.5.* 2004.

FHWA, United States. FHWA Highway Construction Noise Handbook. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). August 2006. Available at: http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/. Accessed on: July 2015.

Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment, Final Report*. May 2006.

Franks, K.A. and Lambert, P.F. *Early California Oil: A Photographic History, 1865-1940.* 1985.

Glassow, Michael A, L. Wilcoxen, and J. M. Erlandson. *Cultural and Environmental Change during the Early Period of Santa Barbara Channel Prehistory.* 1988.

Guinn, J.M. *Gold! Gold! Gold! From San Francisqito.* 1977.

Institute of Transportation Engineers (ITE). 2012. *Trip Generation*, ninth ed.

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

IPCC. 2013: Summary for Policymakers. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. 2013.

IPCC. Summary for Policymakers. In: *Climate Change 2014, Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. 2014.

Jennings, C. W. *Geologic Map of California: Long Beach sheet. California Division of Mines and Geology.* 1962.

Johnson, Paul C., Dorothy Krell, John S. Weir, Harry Downie, Adrian Wilson, Joe Seney, Philip Spencer, and France Carpentier. *The California Missions A Pictorial History.* 1972.

Johnson, J. R., T. W. Stafford, Jr., H. O. Ajie, and D. P. Morris. *Arlington Springs Revisited.* 2002.

Jones, Terry L. and Kathryn A. Klar. *California Prehistory: Colonization, Culture, and Complexity*. 2007.

King, Chester D. Native American Placenames in the Santa Monica Mountains National Recreation Area, Agoura Hills. 1994.

Koerper, Henry C., and Christopher E. Drover. *Chronology Building for Coastal Orange County: The Case from CA-ORA-119-A.* 1983.

Koerper, Henry C., Roger D. Mason, and Mark L. Peterson. *Complexity, Demography, and Change in Late Holocene Orange County*. 2002.

Kowta, Makoto. *The Sayles Complex, A Late Milling Stone Assemblage from the Cajon Pass and the Ecological Implications of its Scraper Planes.* 1969.

Long Beach, City of. *City of Long Beach General Plan Land Use Element.* 1975. Available at: http://www.lbds.info/planning/advance_planning/general_plan.asp. Accessed on: June 2015.

Long Beach, City of. *City of Long Beach, California – Local Coastal Program.* 1980. Adopted by the City Council on February 12, 1980. Certified by the California Coastal Commission on July 22, 1980. Available at: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=3795. Accessed on: June 2015.

Long Beach, City of. *City of Long Beach General Plan Scenic Routes Element.* Adopted 1989, revised April 1997.

Long Beach, City of. *City of Long Beach General Plan Air Quality Element.* 1996. Available at: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2437. Accessed on: July 2015.

Long Beach, City of. *City of Long Beach General Plan Historic Preservation Element*. 2010. Available at: http://www.lbds.info/planning/advance_planning/general_plan.asp. Accessed on: July 2015.

Long Beach, City of. *Sustainable City Action Plan*. February 2010.

Long Beach, City of. *Downtown Plan Final Program Environmental Impact Report* SCH No. 2009071006. November 2011.

Long Beach, City of. *Downtown Plan*. January 2012.

Long Beach, City of. *Long Beach Courthouse Demolition Draft Environmental Impact Report* SCH No. 2014051003. October 2014.

Long Beach, City of. *2013-2021 Housing Element of the General Plan*. 2014. Available at: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=4185. Accessed on: March 2015.

Long Beach, City of. Municipal Code. Available at: http://municipalcodes.lexisnexis.com/codes /longbeach. Accessed on: July 2015.

Los Angeles Airport Land Use Commission.. Long Beach Airport, Airport Influence Area Map. 2003. Available at: http://planning.lacounty.gov/assets/upl/project/aluc_airport-long-beach.pdf. Accessed on: July 2015.

Los Angeles County Metropolitan Transportation Authority (Metro). 2010 Congestion Management Program. 2010. Available at: http://media.metro.net/docs/cmp_final_2010.pdf. Accessed on July 2015.

McCawley, William. *The First Angelinos: The Gabrielino Indians of Los Angeles*. 1996.

McDougall, I., Brown, F.H., Vasconcelos, P.M., Cohen, B., Thiede, D., Buchanan, M. *New single crystal 40Ar/39Ar ages improve time scale for deposition of the Omo Group, OmoeTurkana Basin, East Africa*. 2012.

McLeod, S. A. Natural History Museum of Los Angeles County: Unpublished collections data. 2014.

Mithun, Marianne. *The Languages of Native North America.* 2004.

Moratto, Michael J. *California Archaeology*. 1984

National Oceanic & Atmospheric Administration (NOAA). *Annual Greenhouse Gas Index*. September 2010. Available at: http://www.esrl.noaa.gov/gmd/aggi/. Accessed on: July 2015.

Nevin, David. *The Old West: The Mexican War.* 1978.

Norris, R. M. and R. W. Webb. *Geology of California.* 1990.

O'Neil, Stephen. The Acjachemen in the Franciscan Mission System: Demographic Collapse and Social Change. Master's thesis. 2002.

Parmesan, C. *Ecological and Evolutionary Responses to Recent Climate Change*. 2004.

Reinman, Fred M. *Maritime Adaptations on San Nicolas Island, California.* 1964.

Rick, Torben C., Jon M. Erlandson, and René Vellanoweth. *Paleocoastal Marine Fishing on the Pacific Coast of the Americas: Perspectives from Daisy Cave, California.* 2001.

Robinson, W. W. *Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip, Homesteads*. 1979.

Rolle, Andrew. *California: A History.* 2003.

Shumway, Burgess McK. *California Ranchos.* 2007.

Society of Vertebrate Paleontology (SVP). *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.* 2010.

South Coast Air Quality Management District (SCAQMD). *CEQA Air Quality Handbook*. 1993.

SCAQMD. *Final Localized Significance Threshold Methodology*. 2003. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2. Accessed on: June 2015.

SCAQMD. Proposed Tier 3 Quantitative Thresholds – Option 1. September 2010.

SCAQMD. Air Quality Significance Thresholds. 2015. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed on: July 2015.

SCAQMD. Appendix C - Mass Rate LST Look-up Tables. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2. Accessed on: June 2015.

Southern California Association of Governments (SCAG). *Employment Density Study Summary Report. 2001*

SCAG. *Adopted 2012 RTP Growth Forecast*. Website. 2012a. Available at: http://www.scag.ca.gov/forecast/index.htm. Accessed on: July 2015.

SCAG. *Regional Transportation Plan/Sustainable Communities Strategy 2012-2035*. 2012b. Available at: http://rtpscs.scag.ca.gov/Documents/2012/final/f2012RTPSCS.pdf. Accessed on: July 2015.

Southern California Edison (SCE). Webpage – "Among the Nation's Leading Utilities for Renewable Energy." Available at: https://www.sce.com/wps/portal/home/about-us/environment/renewable-power/!ut/p/b1/hc9NC4JAEAbg39LBY-7ommm3FcXWQyYK6V5CY9sEc0Mt6d-nUQehj7m9w_PCDGIoRazOb6XIu1LWeTVmZu41yydrGgMNk9gG6lCXRLqnwRYGkA0AvgyBf_0dYlPiJ8ZiIPoS-w7FiWv8Bq7xBrYP3joIRxBhoDiCTUwIBjBf4MeRAWKiksXz4YzUBbYEYg0_8oY36rUZ1qeuu7QrBRTo-14VUoqKqwd5VuBT5STbDqVTiS7nFEo6Z8W9nz0A7QfZHA!!/dl4/d5/L2dBISEvZ0FBIS9nQSEh/?from=renewables. Accessed on: March 2015.

Stewart, Joshua. Long Beach timeline: From land grant to redevelopment. 2013. Available at: http://www.ocregister.com/articles/jstewart-521691-lbregister-writer.html. Accessed on: July 2015.

True, Delbert L. *Bedrock Milling Elements as Indicators of Subsistence and Settlement Patterns in Northern San Diego County, California*. 1993.

United Nations Framework Convention on Climate Change (UNFCCC). *United Nations Framework Convention on Climate Change.* August 2007. Available: http://unfccc.int/files/essential_background/convention/status_of_ratification/application/pdf/unfccc_conv_rat.pdf. Accessed on: July 2015.

UNFCCC. *Outcome of the work of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its sixteenth session.* November 2011. Available at: http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/awgkp_outcome.pdf. Accessed on: July 2015.

UNFCCC. *Report of the Conference of the Parties on its seventeenth session*. 2012. Available at: http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf. Accessed on: July 2015.

United Nations. *Gateway to the United Nations Systems Work on Climate Change: Durban conference delivers breakthrough in international community's response to climate change***.** 2014. Available at: http://www.un.org/wcm/content/site/climatechange/pages/gateway/the-negotiations/durban. Accessed on: July 2015.

United States Environmental Protection Agency (US EPA). *Exposure Factors Handbook*. August 1997.

US EPA. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2010*. U. S. EPA #430-R-11-005. April 2014. Available at: http://www.epa.gov/climatechange/emissions/usinventoryreport.html. Accessed on: July 2015

Wallace, William. *Suggested Chronology for Southern California Coastal Archaeology.* 1955.

Wallace, William. *Post-Pleistocene Archaeology, 9000 to 2000 B.C. In California.* 1978.

Weber, D. J. *Cultural Tradition and Ecological Adaptation on the Southern California Coast.* 1982.

Workman, Boyle. *The City that Grew*. 1935.

World Meteorological Organization (WMO). A summary of current and climate change findings and figures. March 2013. Available at: http://www.wmo.int/pages/mediacentre/factsheet/documents/Climate-Change-Info-Sheet-136_fr.pdf. Accessed on: July 2015.

7.1.2 Persons Contacted

Amy Bodek. Long Beach Development Services, Executive Office. April-July 2015.
Craig Chalfant. Long Beach Development Services, Planning Bureau. April-July 2015.
Shane Green. Linscott, Law & Greenspan, Engineers (LLG). June 26, 2015.
Stephanie Kemp. City of Long Beach, Human Resources. July 2015.

7.2 REPORT PREPARERS

This EIR was prepared by the City of Long Beach, with the assistance of Rincon Consultants, Inc. Consultant staff involved in the preparation of the EIR are listed below.

Rincon Consultants, Inc.
Shannon Carmack, Architectural Historian
Aubrey Mescher, Senior Environmental Planner
Joe Power, AICP, Principal in Charge
Sarah Richman, Associate Environmental Planner
Lindsey Sarquilla, Associate Environmental Planner
Wade Sherman, Graphics Technician
Katherine Warner, GIS Technician

Traffic Impact Analysis- Linscott, Law & Greenspan, Engineers
Richard E. Barretto, Principal
Shane Green, Transportation Engineer III

This page intentionally left blank.